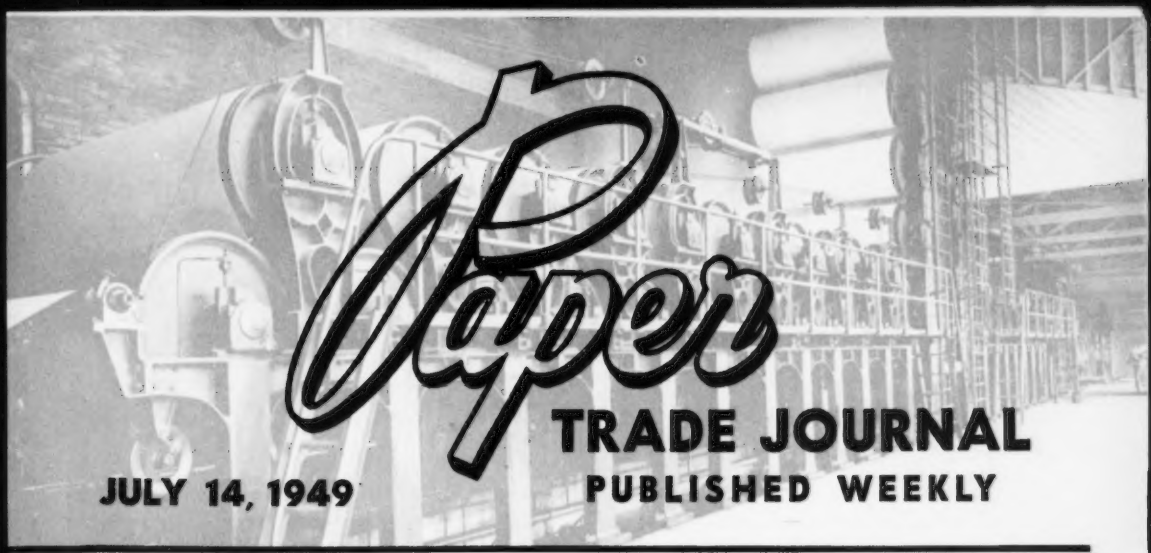

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New York 19, N. Y.
Phone: PLaza 7-2370

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Subscriptions

Payable in advance.
By the year, $5.00
Single copy 15 Cents
Canada, $7.00
Other Foreign countries, $8.50

MEMBER

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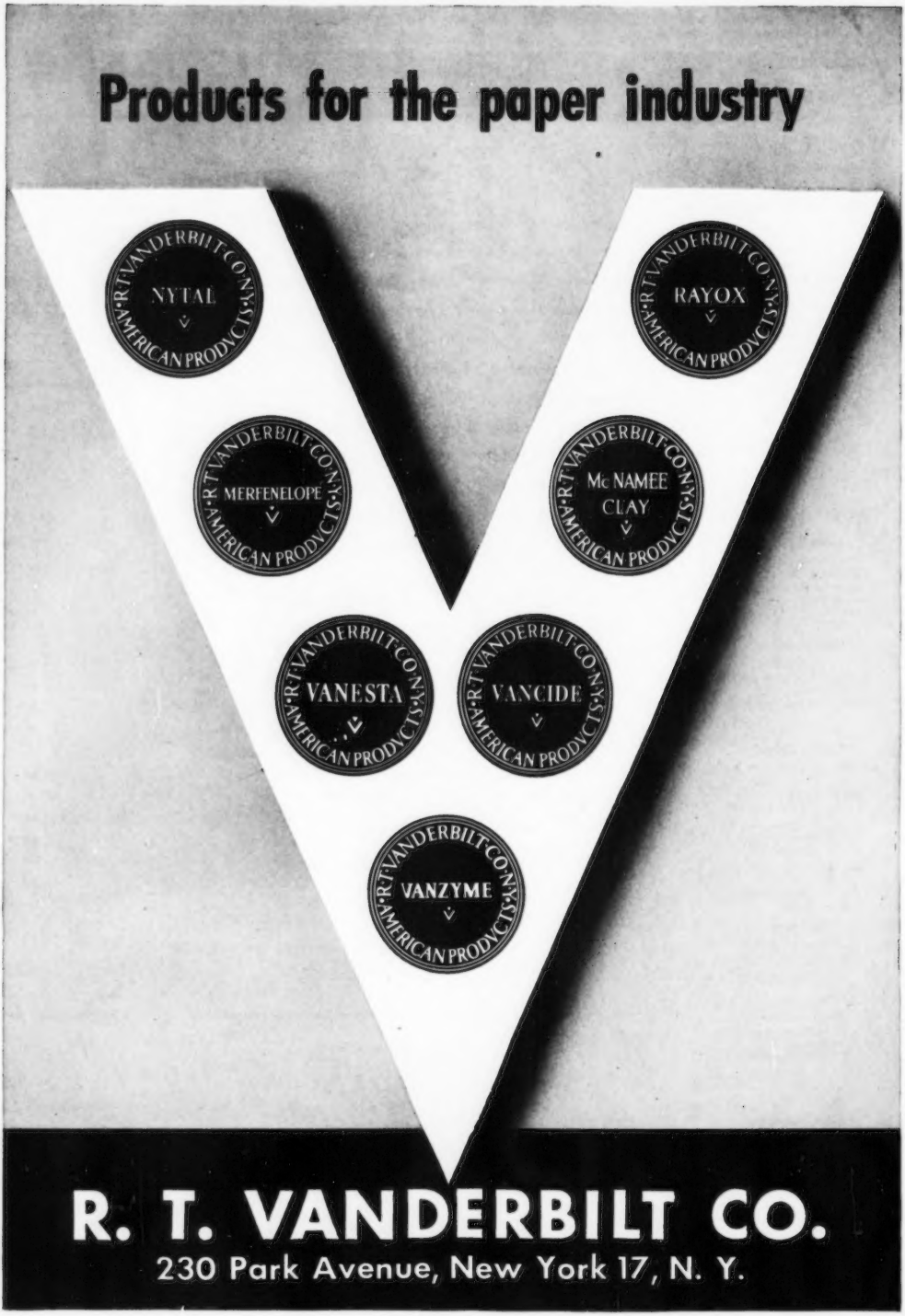
PAPER TRADE JOURNAL

VOL. 129 **NO. 2**

Entered as Second Class matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1949 by Lockwood Trade Journal Co., Inc. PAPER established Feb. 17, 1899, combined with PAPER TRADE JOURNAL, Nov. 16, 1899. PAPER, established Sept. 21, 1910, combined with PAPER TRADE JOURNAL, February 19, 1926. All rights to the above titles reserved. Contents of PAPER TRADE JOURNAL, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. PAPER TRADE JOURNAL is indexed in *Industrial Arts Index* and *Engineering Index*. Also publisher of LOCKWOOD'S Annual DIRECTORY OF THE PAPER AND ALLIED TRADES.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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, July 13, 1949.

Currency Difficulties Reverberate

British, Finnish and other currency problems added further confusion to the North American woodpulp market during the past week, with special impact on Canadian producers. While it is yet early to appraise the effect of Britain's export cutback (which the currency crisis had made necessary) on Canadian woodpulp and newsprint, the situation is held by Elliot M. Little, president of Anglo-Canadian Pulp and Paper Mills of Quebec, to be serious, though "no cause for panic." Loss of export markets to the Canadian pulp and paper industry "cannot help but have an adverse effect on Canadian economy and our standard of living," Mr. Elliot said.

Dropping prices and international competition for paper markets, the subject of secret discussion of fifty manufacturers from Norway, Sweden and Finland at Karlstad, Sweden, brought agreement on a 10 percent price reduction for all kinds of paper except newsprint.

Devaluation of the Finnish markka by 17.7 percent on July 4, said by Finnish representatives to be a necessary step in order to meet third quarter levels, is interpreted in U.S. markets as underwriting an aggressive sales program for its share of the U.S. market.

Because of the quietus in woodpulp buying as a result of mill closings, it is not apparent whether all Canadian unbleached krafts will fall to the $82.50 price already reached, or whether the Scandinavians will meet quotations. It seems clear, however, that spot tonnages of all pulps are available at much less than formally quoted prices.

Kraft Production Flags

Bright hopes that the noticeable rally in kraft production in early June presaged the expected upturn in the whole industry suffered a setback as the trend failed to develop. Late June figures show the ratio of production of unbleached kraft paper to potential mill capacity for that product at 66.2 percent for the week ended June 25, 66.0 percent for the week ended July 2, and 91.1 percent for the corresponding week of 1948.

Kraft paper prices are firm and the undertone of the market strong, this despite spot tonnages of kraft wrappings reported below quoted prices. No softening is anywhere apparent.

Container Outlook Favorable

It is expected that present container demand will be maintained throughout the summer and early fall. Demand for some types such as food packages will increase. Thereafter and through the year to winter it appears there will be some further adjustments necessary.

The long term favorable growth prospect of the container industry remains undiminished, the U.S. Dept. of Commerce reports.

In substance it appears that the year 1949 will see the national economy return to a state where container seasonal ups and downs can be anticipated with reasonable certainty and industry can plan accordingly. Trends in consumer preference, from one type of container to another will be the trends and not distorted by shortages and other things which have made it advisable to use interchangeable or substitute packaging. That this may involve some shaking out of the weaker lines, some further cutting back of production of some types of containers has been foreseen as inevitable in the natural growth and progress of the industry, it is stated.

Shipping Containers — Shipments of corrugated and solid fibre shipping containers decreased 10.4 percent during the first quarter 1949. This decrease was comparable to the change in general business activity during the same period. It appears that present shipments in the corrugated and solid fibre industry have leveled off with no further decline likely this summer, the Department states.

Folding Paper Boxes — Demand for folding paper boxes continued at a surprising good rate during the first quarter 1949. Production of folding boxboard disclosed a 5.1 increase in the first quarter of this year over the same period in 1948. Since folding box shipments follow boxboard production fairly closely, the outlook for 1949 based on the first quarter operations looks good.

Set-Up Paper Boxes — Demand for set-up boxes, like folding boxes, held up surprisingly well during the first quarter of 1949. A comparison of preliminary set-up boxboard production data disclosed only a 2.3 percent decline from the first quarter a year ago. Present reports envisage continued operations the rest of the summer at approximate 1948 levels.

Shipping Sacks and Bags — It has been found that data on the production of shipping sack and bag papers is one of the best yardsticks for measuring the volume of business done by these two industries. Demand for heavy paper shipping sacks declined during the first quarter of 1949 from the same period a year ago whereas the demand for paper bags increased. (Ed: Pickup expected in shipping sacks in June is delayed, and this trend is unaltered.)

New England Area — Paper and paperboard packaging materials are plentiful and generally have dropped in price. What can be expected after the normal summer seasonal lull is problematical. Many producers and consumers of paper and paperboard containers in this area believe that 1949 will be a good year despite some decrease in both unit and dollar volume.

Demand for paper and paperboard containers fell during the first quarter 1949. The drop in dollar volume in folding box demand in the N. E. area is estimated to have been between 10 and 20 percent during this period. Although part of this reduced dollar volume in folding boxes can be attributed to price reductions, unit volume is also reported down, averaging about 5 or 6 percent throughout the New England area.

Decline in set-up box demand in this area for the comparable period has not been as great although the general feeling is that set-up box production appears to be more vulnerable in the long-term outlook.

Although unit volume has been approximately at the same rate as last year, dollar volume has declined, partly because of increased purchases of lower priced grades and partly because of sharp declines in the purchase of so-called "luxury" boxes.

Demand and shipments of corrugated and solid fibre shipping containers have declined approximately 10 percent in the last quarter, compared to the similar period last year. The usual spring upturn did not materialize to the degree expected.

(Concluded next week)

Export Market† Indexes

Index of general business activity for the week ended July 2 dropped to 133.4 from 144.2 in the preceding week, compared with 141.8 in the corresponding week of 1948. Index of paperboard production fell to 151.5 from 170.3 in the preceding week, compared with 168.9 in the corresponding week of 1948.

Comparative ratios of U. S. paper and paperboard production to mill capacity, as reported by AP&PA, are:

	July 2 1949	June 25 1949	July 3 1948	July 5 1947	July 6 1946
§Paper	77.8	$83.9	91.3	62.7	61.1
Paperboard	75.0	80.0	89.0	78.0	70.0

Revised

Paperboard Production (Tons)

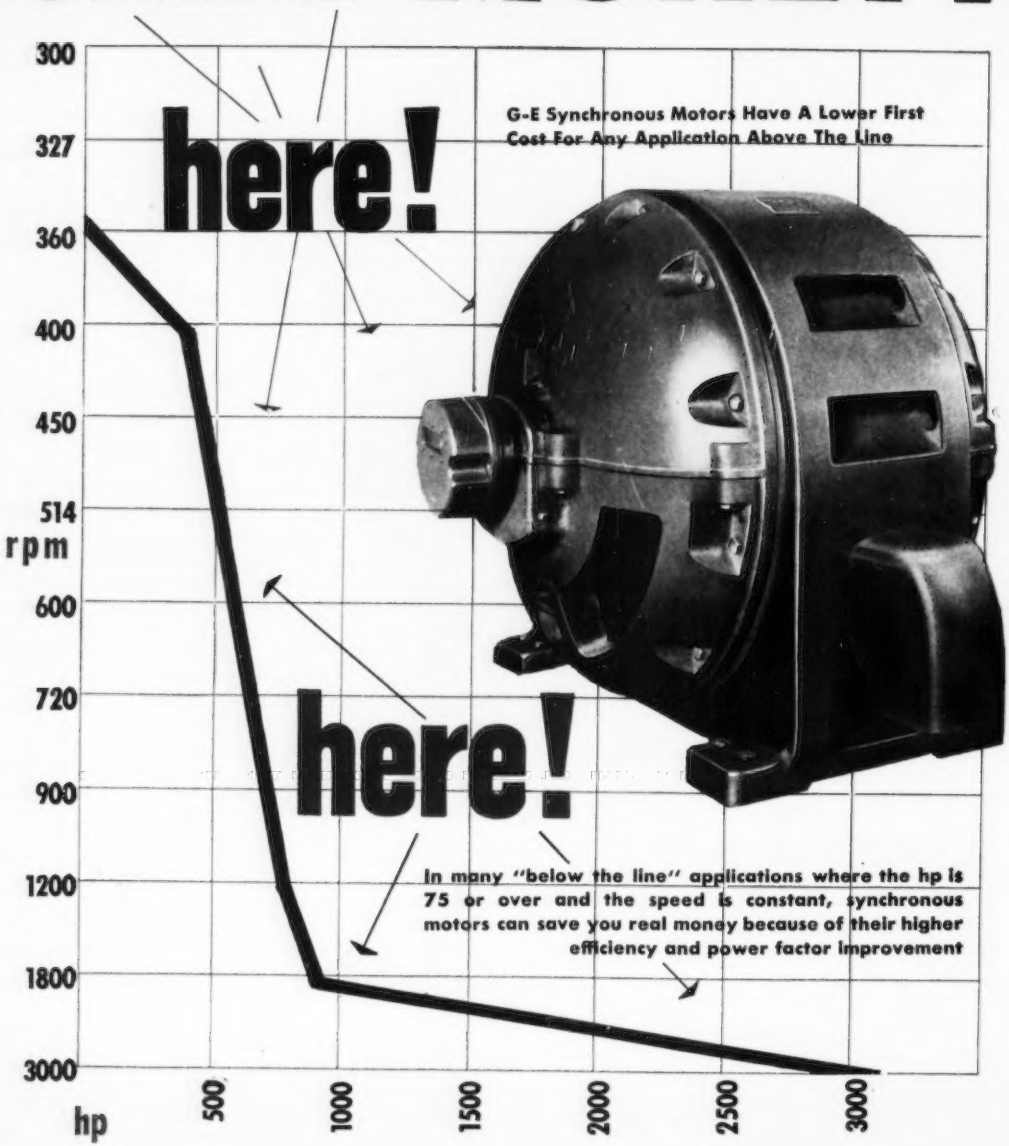
	July 2 1949	June 25 1949	July 3 1948	Month of June
Production ...	153,817	169,612	171,583	793,875
New Orders..	161,576	158,700	215,857	807,154
Unfilled Orders	243,297	241,787	381,065	243,297

Percent of Activity, Current, 75%; Year,80%.

Pakistan — Civilian and government paper requirements show every indication of increasing. The Government is interested in establishing an up-to-date paper mill which will supply a large part of the country's requirements and proposes to have detailed plans drawn up by Scandinavian and Canadian firms of consulting engineers.

†Source, OIT, U. S. Dept. of Commerce.

SAVE MONEY!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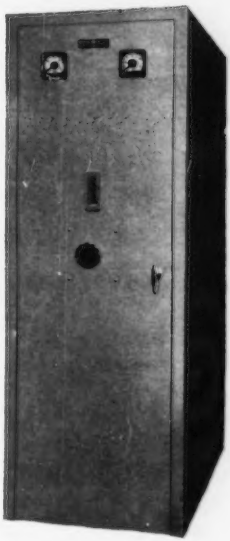

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GENERAL ELECTRIC

Paper TRADE JOURNAL

News of the Week

MILLS

Gould Properties at McKeever Sold

LYONS FALLS, N.Y. — The Rice Veneer Co., Inc., headed by Donald R. Rice, has purchased properties at McKeever from the Gould Paper Co., of which R. W. Shaver is vice-president and general manager. The property involved includes 70 acres of land, wood pulp mill facilities, six residences, four resort-type camps, a store and warehouse, building repair and storage garages and stables. Rice Veneer Co. is the successor to Rice & Salls, Inc., Fairhaven, Vt.

Granted 50-Year License

WASHINGTON — The recent dispute concerning hydroelectric rights on the Connecticut River was recalled on July 6 as the Power Commission granted a 50-year license to the Holyoke Water Power Co. for redevelopment of a hydroelectric plant at Holyoke, Mass. The project, including construction of a power plant at the existing dam, is estimated to cost $4,162,000. The ultimate installed generating capacity of the plant will be 60,000 kilowatts.

To Install Paper Machine

ALBANY, N. Y. — Thomas Galente & Sons, Inc., has moved its New York office to the plant it has renovated in the old power house building of the Hudson Valley Railway in Mechanicville, N. Y. The company plans to install a paper machine in the larger of the two buildings and use the smaller one as a converting and distributing plant for the products of Walloomsac Paper Mills, Inc., an affiliated company.

Jones Estate, $169,081.74, Net

WATERTOWN, N.Y. — Seymour M. Jones, vice-president and head of the sales department of the Brownville Paper Co., who died on February 21, left a gross estate of $181,957.82 and a net estate of $169,081.74, according to the inheritance tax appraisal filed here. Principal asset of Mr. Jones' estate was $147,200, representing 736 shares of the common stock of the Brownville Paper Co.

International, Westvaco Land Swap

CHARLESTON, S.C. — Some 14,500 acres of South Carolina timberland has been traded by the International Paper Co., for 8,596 acres in North Carolina owned by the West Virginia Pulp and Paper Co.

The deal was closed for a consideration of $10, paid by West Virginia, according to papers filed late in June in the office of the register of mesne conveyance.

Timber on the two tracts is appraised at about equal value.

The swap gives West Virginia lands in Charleston, Berkeley, Allendale, Jasper, Orangeburg and Williamsburg counties.

International gets lands in Duplin and Pender counties in North Carolina.

Westvaco has now disposed of all its land holdings in North Carolina.

Conn. River Hearing in Late Fall

HOLYOKE, Mass.—Conrad J. Hemond, secretary-manager of the Holyoke Chamber of Commerce, on July 8 notified paper manufacturers that the Army's board of engineers for rivers and harbors will hold a public hearing in Washington some time in "late fall" on its proposed $32,000,000 plan for making the Connecticut River navigable from Long Island Sount to Holyoke.

OLLIE W. MESSNER

—appointed manager at the Stroudsburg, Pa., board mill of the Empire Box Corp . . . Mr. Messner, was recently associated with the Robertson Paper Box Co. as superintendent in charge of mill operations; at the Lowe Paper Co. as superintendent, and at the Tarentum Products Corp. as production manager . . . He has been an active member of the American Pulp & Paper Mill Superintendent's Ass'n., for a number of years, serving as a vice-president in 1944, and president in 1948.

If City Council Approves

OTTAWA—It is understood here that of the City Council approves the purchase of the Ottawa Light, Heat & Power Co. for $7,600,000 and the OLHP shareholders agree to the transaction, Ontario Hydro is expected then to take action to acquire all the water lots on the Ottawa River at Chaudiere Falls in order to develop at least 100,000 horsepower at a cost of $15,000,000, with owners of these water lots being the E. B. Eddy Co., J. R. Booth Ltd., Bronson Co., Ottawa Transportation Co., and Ottawa Light, Heat & Power Co.

Oregon Mill in New Location

MILL CITY, Ore.—The Oregon Pulp & Paper Co. mill which was moved from its Monument Peak location to a new site between this city and Gates, has been put into operation. The mill was set up at its new location under the direction of Tony Ziebert. It will produce about 35,000 board feet daily.

Taylor to Keith Paper Co.

DALTON, Mass.—Leonard P. Taylor, until recently superintendent of the Byron Weston Co., has been named superintendent of the Keith Paper Co., in Turners Falls. A veteran of World War I, Mr. Taylor was associated with the American Writing Paper Co. in Holyoke for many years.

Peck to Peter J. Schweitzer Co.

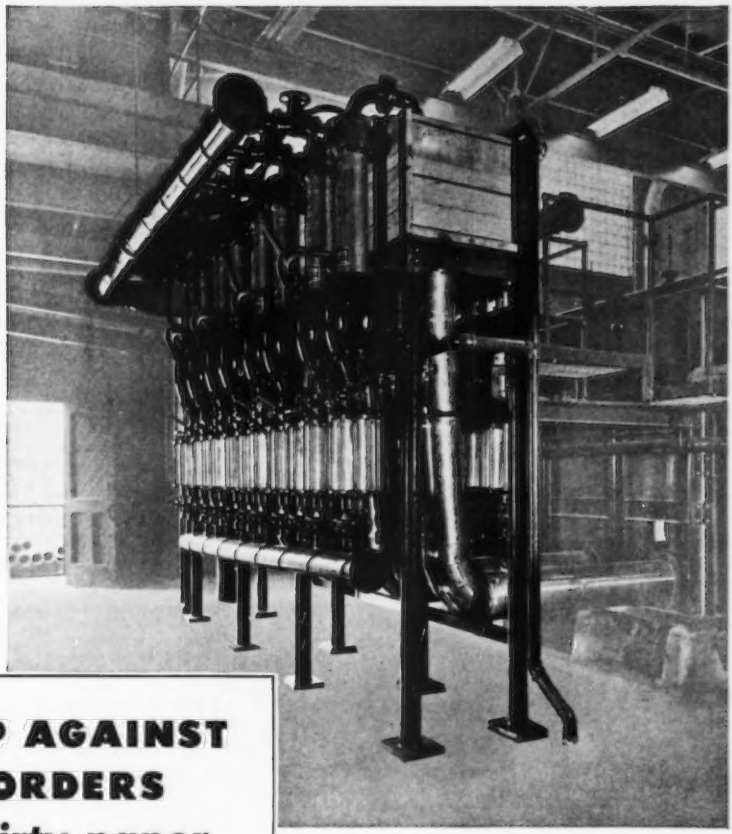
SPOTSWOOD, N. J.—Harold W. Peck, who has been associated with the Crown-Zellerbach division of the National Paper Products Co., Carthage, N.Y., for the past five years, has been appointed chief engineer of the Peter J. Schweitzer Co., producer of cigarette paper.

Monadnock Taking Week Off

BENNINGTON, N. H. — Monadnock Paper Mills, Inc., will be closed the week of July 17. The shipping department and office, however, will remain open during this time.

Madden BSD&T Co. Director

BOSTON — James L. Madden, president and a director of the Hollingsworth & Whitney Co., has been elected to the directorate of the Boston Safe Deposit & Trust Co.



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Find out what Dirtecs can do for your paper. Now is the time when they'll do you the most good.

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UNION'S MULTIWALL BAGS TELEVISED

A recent guest star on WNBT in New York, key station of the National Broadcasting Co., television network, was H. Stuart Daniels, executive vice-president of the Union Bag & Paper Corp. . . Mr. Daniels appeared on "Natural Treasures", a show devoted to science and industry and on which he discussed paper and paper bags . . . Sections of Union Bag moving picture film were used to illustrate the conversion of chips to paper while company bag samples were shown by Mr. Daniels to illustrate the variety of consumer items the organization produces . . . A highlight of the program came when—for the first time on television, Radcliffe Hall, a six-foot announcer, tried to punch his way out of one of Union's multiwall bags. Mr. Daniels held the bag upright while the announcer started swinging. The bag itself suffered no damage, but Mr. Daniels found himself on the receiving end of Hall's punches and almost "took the count" . . . Pictured above are Mr. Hall (left) with Mr. Daniels and Ivan Sanderson, producer of the show. The photograph was made during the actual telecast.

Horner, Water Authority Chairman

BUFFALO, N. Y.—John Horner, resident division manager for the Savin-Robbins Paper Co., has been appointed to the newly-created Erie County Water Authority for a three-year term. He will serve as chairman of the Authority during the coming year.

International's New Boston Quarters

BOSTON—The Boston sales offices of the International Paper Co. have been consolidated in new quarters at 80 Federal street, telephone HAncock 6-2264. Housed in the new location are the Bagpak; book, bond and specialties; and Southern Kraft divisions.

Corning Joins Sorg's N. Y. Office

NEW YORK—Charles T. Corning has joined the local office of the Sorg Paper Co. in a sales capacity. For the past two years he was in the sales department of the International Paper Co., here.

St. Regis' Taggart Plant Resumes

OSWEGO, N.Y.—Manufacturing operations were resumed in the paper mill of the Taggart bag plant, a division of the St. Regis Paper Co. on July 11. The mill was idle for nearly two months.

N. E. Wood Waste Survey

By EDGAR L. HEERMANCE
Northeastern Wood Utilization Council

NEW HAVEN, Conn.—Anyone touring northern New England is distressed by the mountains of sawdust. And that is only one form of unutilized wood material which accumulates at sawmills and wood-working plants. Of the trees in our forests that are cut for lumber, 68 percent of the volume, or more than two-thirds, represents waste. A recent study by the U.S. Forest Service estimates the total wood waste in New England as 172,200,000 cubic feet. Of this, 87,600,000 cubic feet occurs in logging and 84,200,000 in manufacture.

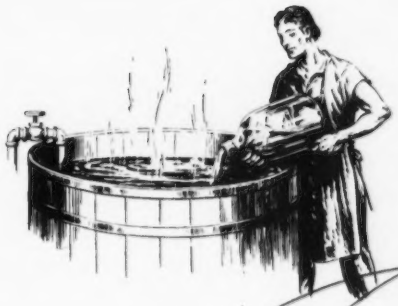
Much of this so-called waste is put to some sort of use. In dairy regions, sawdust is in demand for cattle bedding. A large proportion of the waste is burned at the plant for fuel, to get rid of it, though coal in many cases would be a more economical fuel. The rest of it is carried off to a dump. Sawmills in Vermont are worried over a bill introduced in the legislature forbidding the dumping of sawdust in streams. The mill men recognize that it ought not to be put in the streams, but what are they to do with it?

The northeastern Wood Utilization Council was organized in 1942 for a concerted attack on the problem of low-grade wood and wood waste. Various possible uses for such material have been explored—charcoal, wood molasses, improved stoves and furnaces. The most promising outlet seems to be the production of fiberboard or hardboard. According to the Food and Agriculture Organization, the United States is only using 8 kilograms per capita, as compared with 24 for Sweden. Practically any wood waste can be utilized as a raw material. New methods of producing fiberboard and hardboard have been developed in this country and abroad. The Council is arranging a conference on Wallboard from Waste for next September, in cooperation with the Business School and School of Engineering at Harvard University. Though there have been numerous research and commercial efforts in wallboard, it is believed that this is the first general meeting on the subject. The Council hopes to orient American thought on wallboard production, evaluate its present status, and open the way for new plants in the Northeast.

A local plant manufacturing wallboard from waste would require a certain concentration of raw material, probably at least 20 tons a day. Under a special grant from the Federal Reserve Bank of Boston, the Northeastern Wood Utilization Council is carrying out a field survey to throw

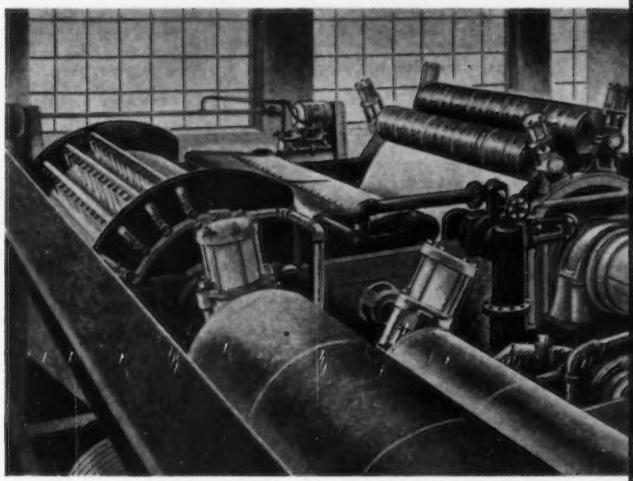
JAMES M. OWENS

—named to the newly created post of extension specialist in wood utilization by the New York State College of Forestry, Syracuse, N. Y. . . He will tell the Empire State's 1,620 firms in wood using industries about the range of services the college can provide and will travel the state as liaison between the college and industry.



as you were in 1900

Paper bleaching was a slow and uncertain process at the turn of the century



as you are today

Bleaching with liquid chlorine in a modern mill is fast, efficient, precise

...with pioneering aid from Niagara Alkali

An old industry with young and progressive ideas, the paper industry has made tremendous strides forward since 1900—in the speed and efficiency of its methods and the quality, variety and utility of its products.

Niagara's pioneer production in America of liquid chlorine and caustic soda helped to make such advances possible in the paper industry—and in the textile, soap, glass and other fields. For pioneer quality and service in electro-chemical products look to Niagara.

NIAGARA ALKALI COMPANY

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light on this problem. A recent graduate of the Yale School of Forestry is visiting the larger wood-working plants and permanent sawmills of New England to determine the kind and quantity of wood waste which they have available. In some cases it might be possible to concentrate the waste from a number of plants in the neighborhood. The survey is confined to manufacturing waste. Another possibility which the Council has been exploring is to supplement this with logging waste in the area and wood from improvement cuttings, worked up by one of the new portable chippers that are now on the market.

CONVERTERS

Marcalus Granted More Filing Time

NEWARK, N.J. — Federal Judge William F. Smith has extended until Oct. 24 the time for Paul L. Troast, Passaic, trustee for Marcalus Mfg. Co., East Paterson, to file a reorganization plan under Chapter X of Bankruptcy Act.

The concern has a mill in Lincoln, N.H., and timber lands in Maine and Canada. The trustee reported sales for the fiscal year ending April 30 were $13,694,225.

The trustee has been authorized to retain counsel in Quebec, Canada, to represent him in litigation there between debtor and Leonce L'Heureux, lumberjack foreman. The foreman is alleged to have 4,203.23 cords of wood tied up in Canada with a wage claim lien.

The court also directed the trustee to employ Nicholas Marcalus, president of the debtor, and Robert L. Marcalus, vice-president and assistant secretary, on a week-to-week basis to continue operation of the East Paterson plant and the New Hampshire mill. The former will receive $326 a week as compared to the $22,000 he had been paid on an annual basis, and the latter will receive $144 a week as compared to his former salary of $10,000.

Dennison Acquires Champaign Site

CHAMPAIGN, Ill. — Dennison Mfg. Co., Framingham, Mass., has purchased a 20-acre tract, lying between Prospect and Harris avenues north of the New York Centrail railroad and Bradley avenue, as the site for a future factory.

"Sometime in the future a branch factory will be built on the tract to manufacture Dennison goods for the middle west, the southwest, and the Pacific Coast. There are no immediate plans for construction on the Champaign site," the company stated.

Kodak Advances Five Executives

ROCHESTER, N.Y. — Eastman Kodak Co. has advanced five of its Kodak Park executives. The men and their new titles are: Donald B. Kimball, general superintendent of paper departments; John P. Helphrey, Jr., assistant general superintendent of paper departments; Francis B. Thorne, assistant superintendent of chemical plant; John L. Patterson, assistant superintendent of chemical plant; Joseph F. Burns, purchasing agent, Kodak Park.

Roosevelt Opens N. Y. Office

NEW YORK — Roosevelt Paper Co., Philadelphia, paper specialist and converter, has opened a sales office here at 200 West 34th street, telephone LAckawanna 4-2820. Eddo. V. Dawson, formerly of the Jessup & Moore Paper Co., will handle telephone sales and inquiries. Bill Rosher and Ben Buckner will also work out of this office.

The company specializes in over-run lots of fine and coarse paper, selling only to paper merchants.

Lily Erecting Toronto Plant

TORONTO — Lily Cups, Ltd., subsidiary of the Lily-Tulip Cup Corp. of New York, will erect a $500,000 one-story, 35,000-square foot plant on a five-acre site in the northeastern part of this city to manufacture paper cups and food containers. The plant will probably be completed in December. Operations of the four-year-old Listowel, Ont., plant will be consolidated with those of the new plant.

Dixie Advances Craig Moore

EASTON, Pa. — Dixie Cup Co. has named Craig Moore assistant to S. M. Sawyer, national sales manager of the food container and automatic drink vending divisions.

Gibney S. M. Club Director

SPRINGFIELD, Mass. — Al Gibney, sales manager of the National Blank Book Co., has been elected a member of the board of directors of the Springfield Sales Managers' Club.

Young Named American G. S. M.

CHICAGO — Warren Young has been appointed general sales manager of the American Paper Goods Co., Kensington, Conn., and Chicago.

FORESTRY

SPCA Summer Meeting

JACKSON, Miss.—The fourth summer field meeting of the Southern Pulpwood Conservation Ass'n. held here, recently, was attended by 175 representatives of the pulpwood industry and others interested in growing and harvesting trees. Pulpwood dealers and producers attended in greater number than any previous meeting, indicating their increasing interest in the conservation program of the Association.

The annual banquet meeting was presided over by the Association's immediate past president, R. F. Weston with Hollingsworth & Whitney Co., Mobile, Ala. President E. J. Gayner, 3rd (Brunswick Pulp & Paper Co., Brunswick, Ga.), and Vice-President J. E. McCaffrey (International Paper Co., Georgetown, S.C.) were unable to attend.

R. D. Morrow, Brandon, Miss., national chairman of the Agricultural and Forestry Committee of the American Legion, was the guest speaker.

H. J. Malsberger, general manager and forester of the Association, briefly mentioned the large number of woodland demonstrations held in Mississippi during the past year by member mills and dealers.

R. S. Andrews, International Paper Co., served as moderator of a panel discussion on conservation in which four pulpwood dealers and three industry representatives participated.

J. W. Mustin, Gulf States Paper Corp., Tuscaloosa, Ala., described his company's forestry essay contest in the schools of several west Alabama counties. The project has grown from two schools in 1944 to 13 last year and reaches over 1,000 children.

L. J. Risch, Jr., of the Gaylord Container Corp., Bogalusa, La., described the intensive methods they employ of following thinning operations made by the wood shipper on private lands. They also engage in free distribution of seedlings to woodland owners and private marking services. They believe, as do other members of the Association, that such a program is vital to their future wood supply.

R. F. Weston reviewed the motion picture program in rural schools engaged in by the Hollingsworth & Whitney Co. since 1946.

Earl Davis, pulpwood dealer of Lake, Miss., shipping to the International Paper Co., outlined the success he has had in woodland meetings attended by all his producers, woods labor, and landowners, where the conservation work was explained by the use of different cutting plots.

Fred Merrill of Zachary, La., shipping to Gaylord Container Corp., provides a forestry service including marking of trees to be cut. The landowner pays 25 cents a cord for this service which is less than actual cost. Mr. Merrill, however, secures the majority of his pulpwood in this manner and fails in this approach only when the owner refuses to accompany him to the woods. In his first year of operation he marked 52 percent of the trees cut, eight percent were marked by owners, and 28 percent was cut from tops. The remaining 12 percent was bought from landowners or producers and he has no record of how it was cut.

Mr. A. W. Pitts, Pittsview, Ala., is a dealer member of the Association and ships his wood to the International Paper Co. Mr. Pitts has been very active in a broad educational program throughout his territory In cooperation with two sawmill operators he finances a weekly radio program on forest conservation. In addition he has held woodland demonstrations and arranges for marking service.

Homer Smith of Brookhaven, Miss., ships to Johns-Manville at Natchez. In the past year he has shipped 85 percent

We changed from steam to an
Industrial Brownhoist Diesel Crane

It paid for itself in four years!

Here are the figures to prove it:

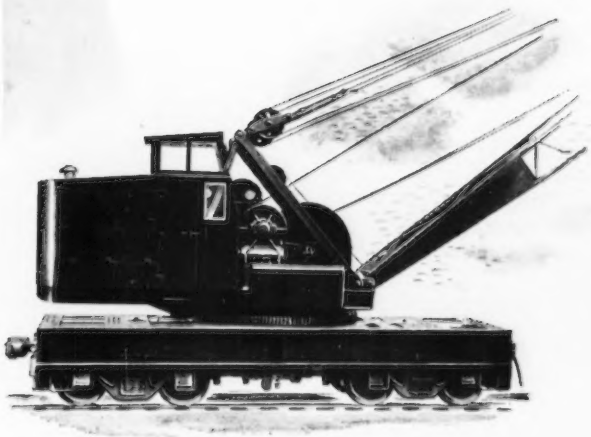
SAVINGS IN FUEL PER DAY $13.40
(Based on 1½ tons coal per day at $10 a ton, against 16 gallons of fuel oil at 10¢ a gallon.)

SAVINGS IN LABOR PER DAY $15.50
(Unproductive firing, banking, cleaning time — 2 hours for engineer at $1.75 per hour, and 8 hours fireman, at $1.50 per hour.)

TOTAL FUEL AND LABOR SAVINGS PER YEAR.. $7,514.00

AND WE INCREASED OPERATING TIME BY 65 DAYS A YEAR!

It takes two hours a day on the average for firing up, banking, taking coal and water, boiler washouts, etc. That figures to 10 hours a week, 520 hours a year, or 65 extra days of productive crane time each year.



BESIDES THESE IMPORTANT EXTRAS:

Safer, cleaner operation; greater production and less operator fatigue because of air operated controls; reduced maintenance time, about one-half that of steam, and elimination of smoke nuisance and fire hazard. Write today for complete information.

BROWNHOIST *BUILDS BETTER CRANES . . . with Diesel power*

INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICH. • **DISTRICT OFFICES:** NEW YORK, PHILADELPHIA, CLEVELAND, CHICAGO • **AGENCIES:** DETROIT, BIRMINGHAM, HOUSTON, LOS ANGELES, PORTLAND, SAN FRANCISCO, SEATTLE, SPOKANE, CANADIAN BROWNHOIST LTD., MONTREAL, QUEBEC.

of his wood cut in a manner to support adequate future growth, which is a complete reversal of his former practices. He stated that he can secure sufficient wood from this source to adequately maintain his operations.

The field trip June 8 showed 165 in attendance that these objectives could be accomplished on privately owned lands. Four of the plots inspected were on privately owned lands and one on lands owned by the U. S. Forest Service. Three tracts had been cut for removal of poles, sawlogs, and pulpwood, leaving adequate growing stock. The other two were cut to remove hardwood which was preventing full establishment and best growth of pine. In addition to removing salable hardwood the unsalable trees were girdled on the other plot.

The meeting adjourned following a barbecued chicken luncheon at the Roosevelt State Park near Morton, Miss., served by Mr. and Mrs. R. O. Hannah.

Aiding in War on Spruce Budworm

PORTLAND, Ore.—An instance of how chemistry can contribute to control of a devastating forest insect in a specific area and bring about completion of such a program at little more than half the anticipated cost, has been demonstrated in the timber lands of Oregon.

State and Federal Governments and private timber industries, battling the spruce budworm called upon the Pennsylvania Salt Mfg. Co., of Washington to produce a DDT insecticide that would meet governmental specifications and fall within the estimated over-all spraying cost of $2.00 per acre. Pennsalt's research laboratories were set to work to develop a proper base for the DDT. Within a short time they announced a special formula that could be produced at such low cost that the over-all project expenditure was cut to $1.07 per acre.

The spraying of more than 260,000 acres—Oregon's first large-scale "Operation Attack" against the budworm, and the second largest forest spraying project ever attempted in this country—began on May 21 in the Central Cascade area of the State.

Fifteen planes and three helicopters took off at dawn each day that weather permitted and flew at an average height of 50 feet above the treetops until thermal updrafts interfered with proper spraying. They applied the special DDT solution, which now is being marketed under the name of Penco Forest Insect Spray, at the rate of one gallon per acre.

Approximately 162,000 acres in this region were sprayed under the direction of the Conservation and Research Division of the State Forestry Department, in cooperation with private timber interests.

Three weeks later the U.S. Forest Service, in cooperation with the Division of Forest Insect Control of the Department of Agriculture's Bureau of Entomology and Plant Quarantine, began work on its phase of the program—more than 100,000 acres of Federal forest land in the vicinity of famed Mt. Hood. There the same Pennsalt formula was used at the same rate of application.

Results from both phases of the project showed approximately a 95 percent mortality rate among the larvae of the budworm—the only form of the insect that can be readily controlled.

Next year it is anticipated that more than 500,000 acres of timber land in Oregon will have to be sprayed, if the budworm, described as a front rank destroyer of fir and spruce forests in much of North America is to be kept under control.

A Federal survey last year revealed that approximately 2,000,000 acres were infested. It takes three years for the budworm to reach the killing stage. Oregon authorities believe that a concentrated attack repeated each year eventually will wipe out the insect in that state.

The Pennsylvania Salt Manufacturing Co. of Washington, located here, is a subsidiary of the Pennsylvania Salt Mfg., Co., Philadelphia.

Fire Fighters Parachute to Ellipso

WASHINGTON—As a salute to American business for its support in the Cooperative Forest Fire Prevention Campaign, the Forest Service in the U. S. Department of Agriculture staged a full-scale public demonstration to show how its smoke-jumpers parachute to forest fires in remote areas of the West. The jumpers parachuted onto the Ellipso, Constitution avenue and 15th Street, N. W., on June 28.

During the demonstration, smoke signals in the center of the Ellipso simulated a forest fire. The smoke jumpers dropped from a plane in their fire fighting uniforms in the Ellipse where they were met by city dignitaries and accompanied by police escort to the National Press Club, where they presented awards to a half dozen of America's topflight industrialists in recognition of the advertising support American business has contributed to the fight against forest fires.

The awards were made to men selected to represent various sagments of American business who contributed an average of more than $3,000,000 a year for the past eight years in advertising to the fight against forest fires. Business firms, large and small, rendered this public service through a continuing national campaign prepared by the Advertising Council, Inc. The business leaders were guests of the American Forestry Assn., at a luncheon at the Press Club for press and radio correspondents, and representatives of other organizations coperating in the forest fire prevention campaign.

The smokejumping show on the Ellipse was carried to the Press Club by television. Commissioner J. Russell Young welcomed the smoke jumpers and luncheon guests. Secretary of Agriculture Charles F. Brannan was the principal speaker. Lyle F. Watts, Chief of the Forest Service presided.

National Forest Timber Price Plan

WASHINGTON — The Forest Service has put into effect in the 12 principal timber producing states a plan under which cost of National Forest timber will be adjusted quarterly to stay with fluctuatnig market prices.

The policy is effective in Oregon, Washington, California, Idaho, Montana, Arizona, Nevada, Utah, New Mexico, Wyoming, Colorado and South Dakota.

Hitherto, National Forest timber has been appraised and advertised at a minimum price to bidders. The successful bidder cut and paid for the timber at the bid price. Uncertainty of the lumber market, among others, has caused some reluctance to buy National Forest timber, and Forest Service said.

The plan is operative only for this year, with decision reserved as to 1950.

Canadian Pulpwood Cut Cut

MONTREAL — Pulpwood harvested by pulp and paper mills east of the Rocky Mountains during the 1948-49 season was about 20 percent lower than in the preceding season, W. A. E. Pepler, manager of the woodlands section of the Canadian Pulp & Paper Ass'n., said on July 8.

Mr. Pepler's prepared statement did not give total figures for either season but the Federal Statistics Bureau figures for 1946 show Canadian pulpwood production at 10,523,256 cords.

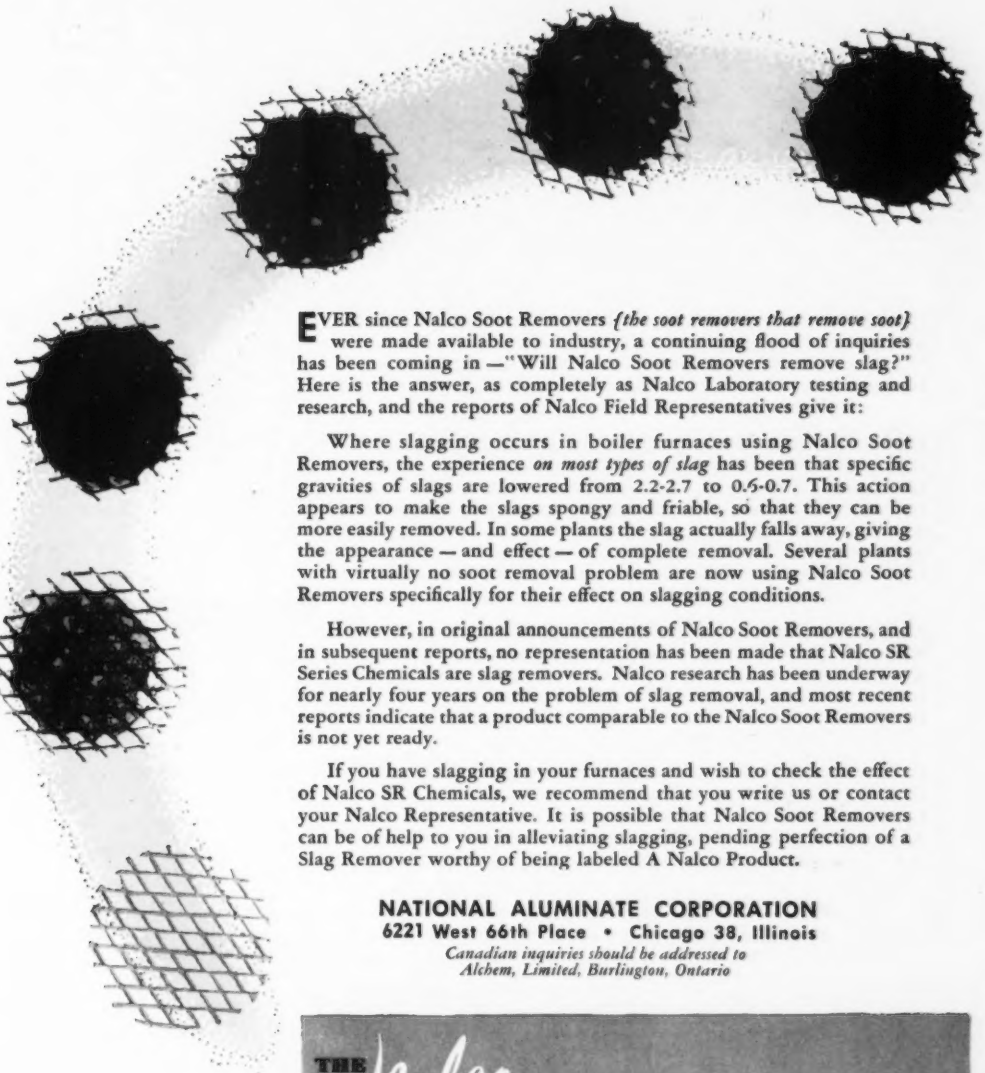
"The drop in the pulpwood cut," Mr. Pepler said, "chiefly reflects the fact that the mills have finally restored their wood inventories, which the war had reduced to dangerously low levels, to a position in line with the post-war demand for their products."

Canadian Society of Forest Engineers Meeting

OTTAWA—"Our contacts and experience with the forests and our silvicultural studies have largely been influenced by spruce as being the most desirable tree species in the forest," stated E. E. Shaw, of the Canadian International Paper Co., Montreal, addressing the Canadian Society of Forest Engineers at a meeting here on "Integration of Forest Utilization and its Relations to Silvicultural Problems."

"We recognize the value of balsam and jack pine, but from that point we are apt to consider other tree species as of minor importance, perhaps as a weed species which must be briefly taken into consideration if we are to harvest the spruce," he declared.

DO *Nalco* SOOT REMOVERS REMOVE **SLAG?**



EVER since Nalco Soot Removers *{the soot removers that remove soot}* were made available to industry, a continuing flood of inquiries has been coming in—"Will Nalco Soot Removers remove slag?" Here is the answer, as completely as Nalco Laboratory testing and research, and the reports of Nalco Field Representatives give it:

Where slagging occurs in boiler furnaces using Nalco Soot Removers, the experience *on most types of slag* has been that specific gravities of slags are lowered from 2.2-2.7 to 0.5-0.7. This action appears to make the slags spongy and friable, so that they can be more easily removed. In some plants the slag actually falls away, giving the appearance — and effect — of complete removal. Several plants with virtually no soot removal problem are now using Nalco Soot Removers specifically for their effect on slagging conditions.

However, in original announcements of Nalco Soot Removers, and in subsequent reports, no representation has been made that Nalco SR Series Chemicals are slag removers. Nalco research has been underway for nearly four years on the problem of slag removal, and most recent reports indicate that a product comparable to the Nalco Soot Removers is not yet ready.

If you have slagging in your furnaces and wish to check the effect of Nalco SR Chemicals, we recommend that you write us or contact your Nalco Representative. It is possible that Nalco Soot Removers can be of help to you in alleviating slagging, pending perfection of a Slag Remover worthy of being labeled A Nalco Product.

NATIONAL ALUMINATE CORPORATION
6221 West 66th Place • Chicago 38, Illinois
Canadian inquiries should be addressed to
Alchem, Limited, Burlington, Ontario

THE *Nalco* **SYSTEM . . . Serving Industry through Practical Applied Science**

"This statement perhaps will outline in general an attitude towards our forests," he continued. "It follows that the economic values, attached to some particular species of trees, will account for the changes in our conception of the forest directly following the lines of such changing values.

"A good example of this type of thinking is the way the old time lumberman considered the forest. To him, the forest was of value as it contained white pine, suitable for saw logs. This conception of values then widened somewhat to include the spruce, and later on the pulpwood forest. Now, with the increasing demands for lumber, plywoods and veneers, we even notice that hardwoods have come into this picture of increasing forest values.

"I wonder, however, if we are thinking far enough in advance of our present conception of total forest utilization?

"First, what do we understand by this term 'integrated forest utilization'; is it not simply the use of the whole of forest production in some form or manner?

"The idea of integration does not stop with the cutting of big timber for saw logs, and the tops and smaller trees to be cut into pulpwood, it should convey a use for all species which are found growing in any particular forest association. Perhaps this is an ideal vision but there is evidence that within certain forest regions we are approaching this idea by gradual steps.

"Economically we are probably just on the threshold of an expansion in the uses of products made from wood fibre and cellulose. Research work is following studies on lignin which has been considered as a waste product. The wood itself may be changed by treatment with certain chemicals. New glues have been discovered which influence widely the increased wood uses. The very structure and characteristic properties of certain woods are changed to fit new and divergent uses. For instance, the soft, weak fibre structure of poplar wood may be turned into a wood product as hard as ebony and colored to suit the taste.

"In this new picture of wood uses we know that the hardwoods have the same basic cellulose as softwoods. In fact, they have some 20 percent more cellulose content per cubic foot of wood than do softwoods. This factor is important as it covers certain differentials in the costs for delivery of hardwoods to the mills, as compared with the cost delivery of soft woods. Furthermore, as demands increase for cellulose products, it brings our hardwood forests into the immediate picture of valuable forest resources right at our back door.

"It has been my observation that any work which opposes nature is usually a difficult struggle but that working with some natural factors will produce amazing results. Nature's answer to attempt to change the hardwood mixture type of forest is that, over a long period of time, you will find the old climax forest creeping back again. Our attempts to change these forests artificially are not very successful.

"Even in the case of fire where you find a poplar and birch forest covers the area, this is a temporary forest which will eventually revert the original climax type of growth which was there to begin with.

"The fact is that in this forest region the hardwood mixture types are actually the fastest growing forests which exist. Why then should we not study their best uses? There are some areas which have been cut over by early settlers for making charcoal, or for pasture, or firewood. On such areas I have found that the forest which followed a cut of 60 years ago today had a stand of from 20 to 30 cords of wood per acre of beautiful hardwood of good pulpwood size. This is an average production of one-half a cord of wood per year. If our hardwood forests are so fast-growing and capable of producing basic cellulose at this rate, what better forest growth for profit could we obtain?

"We have proven how selective cutting operates in a certain forest crop. On the other hand look at the example of our softwood forests when we clear cut for softwoods; the following reproduction will often be a high percentage of balsam. This is a factor of influence due perhaps to the more frequent seed years of balsam, and also because the seed is comparatively larger than spruce and the balsam seedlings will survive on drier ground where the spruce seedlings fail.

"We have a similar story in our hardwoods; the maple, with its big seed containing a storehouse of food, as against the yellow birch with its tiny seed. Following operations we find the heaviest reproduction is maple, while the yellow birch (a much more desirable species commercially) will fail to produce seedlings. What are the factors which we can use to change this picture? Does it lie in our technique of operating?

"An indication of this problem is brought out by regeneration studies which have been made by this company. The accompanying tabulation gives the story. Stocking records indicate:

	Yellow Birch	*Maple*
Softwood type	17%	12%
Softwood-Hardwood type	44%	23%
Hardwood-Softwood type	43%	48%
Hardwood IVa	27%	98%
Hardwood IVb	4%	97%

"The regeneration stocking on cut-over areas is somewhat as follows:

	Yellow Birch	*Maple*
Softwood	35%	52%
Hardwood Softwood	31%	60%
Hardwood	15%	92%

"A study of these figures shows the trend toward maple reproduction as a follow-up of cutting operations.

"What is the exact influence of cutting and what factors are indicated in the promotion of the regeneration of yellow birch; is it scarification or disturbance of the forest floor; is it a soil condition zone? We do not have the answer to these questions at present.

"I have listed the stocking by types which confirm chiefly to the accepted operating practices. However, these types when under study, are further defined by indicator plants. This was found a necessity since the yellow birch obtains its best growth and forms within a specified zone as defined by indicator plants, and this zone may overlap several of the conventional type classifications.

"What are the proper methods for operating in these mixed wood type of forests? Is it clear cutting, selective cutting, certain disturbance of the ground condition?

"We know that selective cutting in softwood may be used to improve the stand. In an old, mature hardwood stand the trees respond in a different manner. The old hardwood trees left standing will not improve in form, growth or in allowing reproduction to come in under shaded areas. What then are the factors which will influence and promote a good forest regrowth?

"These are only a few brief questions, but they indicate problems which you and I must face in the very near future, silvicultural problems brought about by the increasing multiple uses of various species of trees from our forest areas."

MERCHANTS . . . .

Cincinnati Cordage Elections

DAYTON, Ohio — John Church of Chicago has been elected executive vice-president of the Cincinnati Cordage & Paper Co., 543 East Third street. Mr. Church is the majority shareholder in the Dayton and Cincinnati firm. A. T. Nesbitt, formerly president, has been named board chairman and Gale Evans of Cincinnati succeeds Mr. Nesbitt as president.

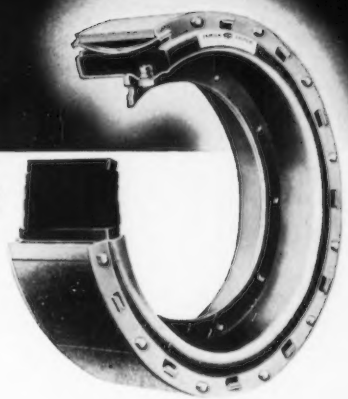
Vollmer to Palmer Co.

MIAMI, Fla.—E. H. Vollmer, a former partner in the Johnson Paper Co., Cincinnati, has made a sales connection with the Palmer Co. of New Orleans. The Palmer branch in Miami is at 2300 N.W. Twenty-Third street, where Hammermill and the products of other leading fine paper mills are handled. Mr. Vollmer's home is at 4180 El Prado avenue, Cocoanut Grove, Fla.

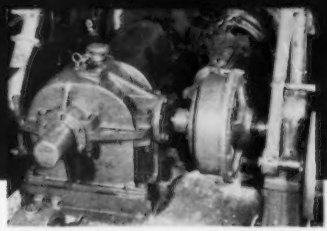
Graham, St. Louis, Expanding

ST. LOUIS — The Graham Paper Co. is erecting a 14,000 square foot warehouse at the southeast corner of Eleventh and Spruce streets at an estimated cost of $150,000. The company has extended for a long period its lease

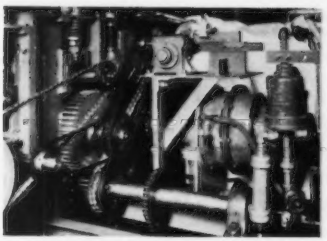
FAWICK-EQUIPPED MACHINES



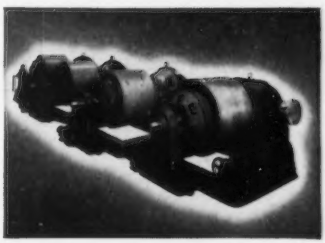
Fawick Air-Ring Clutch or Brake Type E



Fawick Airflex element used as Couch Drive Clutch at Crane & Co., Dalton, Mass.



2 Fawick Airflex elements used as clutch and brake on "One Revolution Knife" by Roofing Machinery Manufacturing Co., Chicago, Ill.



Fawick Airflex Clutches supplied on Black Clawson dryer section drives.

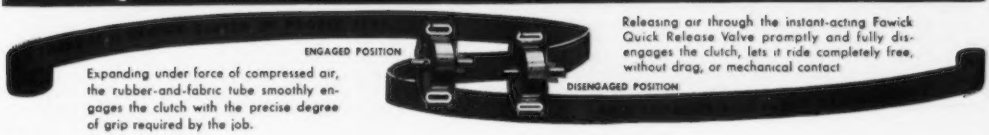
Time-wasting clutch adjustment down time is practically eliminated on Fawick-equipped machines. The moving parts of this Fawick Clutch—the rubber-and-fabric pneumatic tube and the friction shoe assemblies—adjust automatically and compensate for wear.

The smooth engagement action of this Fawick Clutch eliminates sudden shock loads which damage machinery. Controlled torque starting can be obtained with a simple modulating air valve. This type Fawick Clutch is ideally suited to continuous slip applications.

For specific recommendations for your machines, write to our Engineering Department today. Address Dept. PT.

FAWICK CORPORATION

Airflex



Expanding under force of compressed air, the rubber-and-fabric tube smoothly engages the clutch with the precise degree of grip required by the job.

Releasing air through the instant-acting Fawick Quick Release Valve promptly and fully disengages the clutch, lets it ride completely free, without drag, or mechanical contact

of the main building in the Cupples block and has preleased the site of the addition. The building will have a 180-foot railway loading dock and docks for five trucks.

Wholesalers' May Business

WASHINGTON — Paper and paper products wholesalers had an estimated May business of $104,000,000, compared with $110,000,000 in April, the Department of Commerce reports.

Wells, Chamber of Comm. Prexy

NORTH ADAMS, Mass. — Robert O. Wells, proprietor of the Cascade Paper Co., was elected president of the North Adams Chamber of Commerce on June 29.

Erecting Warehouse in Sacramento

SACRAMENTO, Calif. — The Valley Paper Co., is erecting a $32,500 masonry and concrete warehouse building at 1800 Twenty-Fourth street.

Wilder Bros. in New Quarters

PHILADELPHIA—Wilder Bros. Co. is now in new quarters at Sixteenth street and Indiana avenue, telephone BAldwin 3-6800.

ASSOCIATIONS . . .

Nat. Paperboard Ass'n. Meet

WHITE SULPHUR SPRINGS, W. Va.—Meetings of the membership and of the board of directors of the National Paperboard Ass'n. were held at the Greenbrier June 27-28. The sessions were presided over by George E. Dyke, Association president.

At the June 27 session, President Dyke reported on matters of current interest, covering the following subjects: (1) *Changes in the Demand for Paperboard.* This included a review of developments and happenings since the Annual Meeting in New York City, November 11-12, and reference to new capacity for the manufacture of paperboard. (2) *Contact Maintained with National Security Resources Board.* This mentioned the two reports, which have been compiled and submitted to Washington, covering programs to be used in the event of a national emergency. (3) *Cooperation with the Railroads* maintained through Rule 41 policy committee and special technical committee for Rule 41. (4) *Inauguration in April 1949 of Statistical Reports* covering special food boards. (5) *Reference to Reports on Raw Materials* used by the paperboard industry.

Following President Dyke's report, there was a discussion with regard to the outstanding work performed by Oliver M. Porter, as Deputy Director, Forest Products Division, National Security Resources Board.

On motion, a letter was sent to Mr. Porter, expressing to him the thanks and appreciation of the members of NPA for the valuable services he has been rendering to the government and to the paperboard and related industries.

Alvin A. Newburg submitted a report on Paperboard Industry Statistics, prepared by Grafton Whiting and by Mr. Newburg. The report included a review of wall charts and the presentation covered in detail, and up to date, the following items: namely—(1) *Paperboard Orders*—with an analysis of Days to Run, as of October 6, 1946 (the last high) and as of June 18, 1949, showing the percent of reduction for the several industry classifications and divisions. (2) *Waste Paper*—Data showing total collections, total supply and the percentage thereof consumed by the paperboard mills. (3) *Pulp*—Data showing production and consumption, including detailed figures covering "market" pulp. (4) *Paperboard Production*—Data showing shifts in the type of board produced; also an analysis showing liner and corrugating material production by types; also boxboard production by types. (5) *Percent of Activity of Paperboard Mills*—Data showing surplus capacity.

Of particular interest was a wall chart which included for 1925-1949 (to date) colored lines showing—(1) Paperboard Industry Capacity, based on 100% activity; (2) Actual Production for each year; (3) Growth Trend Yearly Average of 4.375%.

J. C. LaGrua of the National Folding Box Co., New Haven, Conn., chairman of the Biological Control Committee, submitted the report of his Committee which reviewed a number of important subjects which have been considered by the Committee since the last report was made to the membership.

The session adjourned at 12.30 P.M., to reconvene the morning of June 28.

The June 28 session was called to order by President Dyke at 10.30 A.M.

President Dyke announced that the Board of Directors had met during the afternoon of June 27, and at his direction the Secretary, H. S. Adler, read the report of that meeting.

This report covered subjects that had been considered by the Board, including the following: (1) Changes in the membership since the last meeting; (2) finances and basis of association dues; (3) appointment of committee to draft a revision of the booklet of Paperboard Standards; (4) meeting places for annual meeting in 1949 and Spring meeting in 1950; and (5) appointment of a nominating committee to submit nominations for president and vice-president, to be elected at annual meeting.

The Committee consists of: Sidney Frohman, (chairman), Hinde & Dauche Paper Co., Sandusky, Ohio; Henry D. Schmidt, Schmidt & Ault Paper Co., York, Pa.; Charles E. Nelson, Mac Sim Bar Paper Co., Otsego, Mich.; and W. Irving Osborne, Jr., Cornell Wood Products Co.; Chicago.

The report of the board of directors' meeting was received and approved and the actions of the Board were ratified.

A report on "The Outlook for the American Economy and for the Paperboard Industry," was submitted by Jacob Baker, of the Econometric Institute, Inc.

A report covering the Save Waste Paper Program and the Waste Paper Situation in the East was read by W. G. Latham, of the Fort Orange Paper Co., Castleton on Hudson, N. Y. He reviewed the activities of the Eastern Conservation Committee, explaining that the program of this group, which is not an Association activity, has recently consisted chiefly of furnishing information to the waste paper industry and to consuming mills in the Eastern States. He stated that while no promotional activities have been necessary during the last six months, the Committee has continued to maintain cordial relations with national, state and some local organizations, the services of which in the future undoubtedly will be needed.

Mr. Latham further stated that in the East at this time a large quantity of waste paper is being destroyed, a situation which he considered to be not for the good of the economy of the country. He suggested that individual consumers of waste paper carefully review their inventory situations and that they build up their inventories, thus assisting the dealers in this critical period and insuring themselves of adequate supplies in the event of increasing demand for paperboard.

W. H. Beckwith, of the Morris Paper Mills, Morris, Ill., reviewed the activities of the Public Relations Committee, Midwest Consumers of Waste Paper, stating that this group, which is not an Association activity, has maintained contact with the waste paper dealers; also that throughout the eight states in which he program has been opterating, there has been noted a steady improvement in the quality of the waste paper being produced.

J. A. Auchter, Vice President, Kieckhefer Container Company, Camden, N. J., reported on the subject "Pulpwood—Supply and Outlook."

Mr. Auchter said that in the first four months of 1949, compared with the first four months of 1948, Southern pulpwood production had decreased 443,000 cords; also that inventories had increased 367,000 cords.

Labor for pulpwood production, Mr. Auchter stated, is available in practically all localities, although some of the surplus, unable to find work, has gone into farming. The closing down of many small sawmills and veneer plants was cited

GLASSINE & GREASEPROOF MFRS. ASS'N. EXHIBIT

The exhibit of the Glassine & Greaseproof Mfr's. Ass'n., at the recent AMA packaging exposition in Atlantic City, was the first to be made by an association of primary paper manufacturers, Thomas J. Burke, secretary-treasurer of the Association, states . . . The exhibit, 38 feet long and about four feet deep, featured eight bullseyes, each of which dramatized a specific characteristic, such as greaseproofness, moisture-waterproofness, transparency and others typical of glassine and greaseproof papers . . . The names and addresses of all Association members were displayed, together with the registered trademarks owned by the Association.

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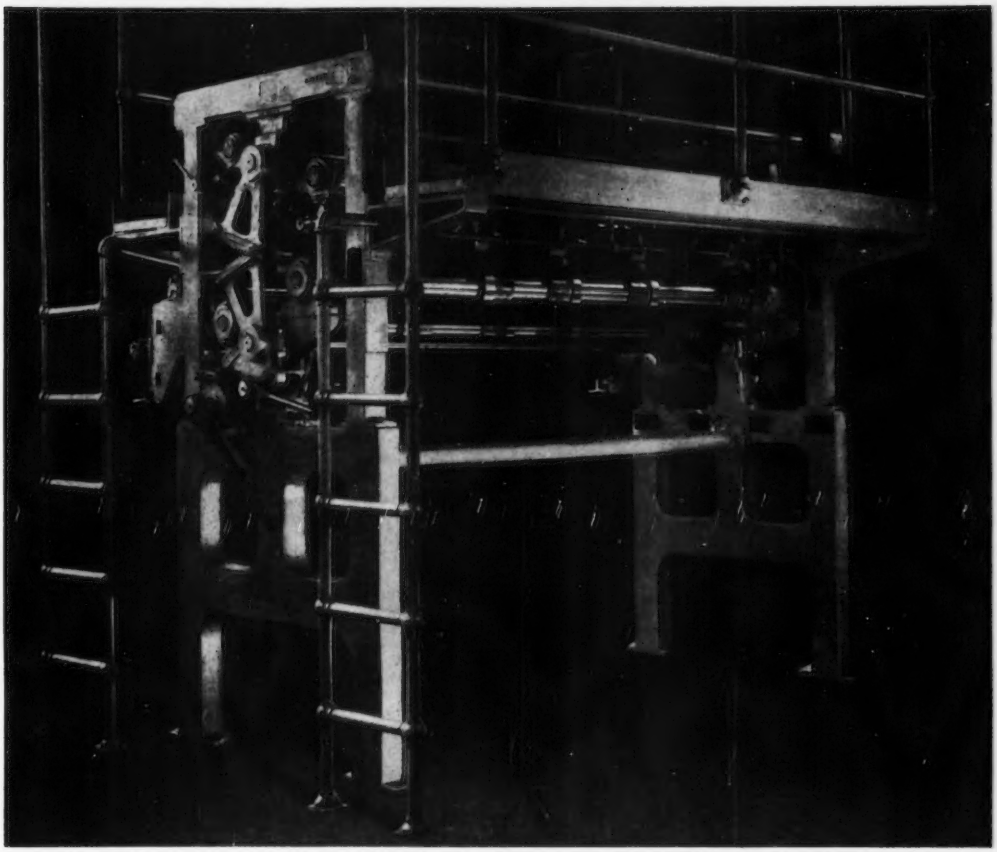
Moore & White DUPLEX SLITTER



This slitter is built of box section frames, for hard continuous operation, and will efficiently handle 95 percent of the grades of paper and paperboard manufactured today. The unit can be operated with practically any type of sheeting equipment where fast change-over from one sheet-width to another is required. It eliminates shutdown time when changing sheet-width and also reduces waste due to resetting of slitters.

This unit, when combined with our new rotary sheet-cutters, permits continuous sheet operation. Changes of width and length of sizes are made without shutting down the combined units. The change-over from one slitter section to the other is fast, simple, and accurate.

Positive throwout of top slitter blades is accomplished through the use of a handle on each slitter section. One quarter-turn of the handle moves all blades in the section either in or out of normal operating position.

The slitter may be driven separately, from the sheet cutter, or direct from the paper machine line shaft. Each section is driven as a separate unit, complete with clutch to eliminate shock loads when change-over is made. All moving parts are encased in antifriction bearings.

The speed range of the new Moore & White Duplex Slitter will meet the needs of any sheeting equipment now in operation. It is built to standard widths of 50, 62, 72, 84, 110, and 124 inches. Additional widths are available in sizes to suit your requirements. Write today for complete information.

CUSTOM-BUILT MACHINES FOR MAKERS OF PAPER AND PAPERBOARD

The MOORE & WHITE Company

15TH STREET AND LEHIGH AVENUE • PHILADELPHIA 32, PA.

as the cause of this labor surplus.

Equipment was reported as no longer being a problem and that trucks for hauling wood are standing in dealers' yards, awaiting purchasers; also that even tractors, though not plentiful, can be had on good delivery schedules.

Mr. Auchter's report concluded with the following statements:

"With decreased car loadings, railroad equipment is plentiful, although specialized pulpwood cars are being fully utilized. The railroad situation is a gloomy spot in the whole picture. Since January, 1947, on interstate movements of pulpwood, there has been a 59% increase in freight charges. The carriers are now in the process of seeking further increases. With wood becoming more plentiful, these increases have had a tendency to constrict the mill's wood buying territories to areas closer to home.

"On the whole, the pulpwood outlook is healthy, and the supply should be ample for the needs of the mills."

A report on "Pension and Profit Sharing Plans in Labor Bargaining," was submitted by Mr. Malcolm K. Whyte, Association counsel.

Mr. Finley F. Bell, labor consultant, submitted a report in which he covered the following subjects: (1) General Labor Situation in the Paperboard Industry. (Demands for wage increases in the industry were reported to have been somewhat mitigated during recent months—the general practice appearing to be to defer the granting of any increases at the present time). (2) Surveys Covering Wage and Wage Related Practices and Wage Fringes. (3) Occupational Directory, etc.

President Dyke, in his address, said in part:

"You will recall the last meeting of our Membership was the Annual Meeting in New York City, November 11-12, 1948, during the week following the presidntial election. Up to that time it seems that our Industry had been enjoying an excellent demand for its products, as shown by the fact that our production of paperboard in 1948 reached the record-breaking high level of 9,502,900 tons—an average per week (in 1948) of 182,700 tons, compared with a weekly average of 175,800 tons in 1947.

"Since that time what the experts choose to call the 'economic climate' has changed. Even last fall it was clear that in most of our products demand and supply had balanced up. At that time, however, we had yet not experienced the change from a sellers' market to a buyers' market.

"Now let us see what has happened since then: (1) The supply of all of our raw materials has gradually increased until at the moment there is evident over-supply in most of them, accompanied by various degrees of price reductions. (2) Generally, the upward spiral of wage rates has leveled off. (3) Labor has become more efficient and unemployment has increased. (4) Also the upward spiral of transportation and other service costs has stopped. (5) Our customers have been buying from hand-to-mouth and have met at least some of their requirements out of accumulated inventories. (6) There has been a return to normal seasonal variations in demand. (7) Our salesmen have had to go back to work. (8) Orders are now accompanied by urgent demands for delivery. (9) Production in the industry has dropped from an annual rate of 9,500,000 tons in 1948 to a six months production at the annual rate of 8,600,000 tons. (10) There has been increasing evidence of efforts to improve quality and to develop new uses in the products of the Industry.

"This Industry is a service industry. The demand for its products is directly paced by the demand for the things manufactured from them—primarily shipping containers, folding and set-up boxes. The demand for these converted products is established by the movement of the goods packaged in them. There is nothing that we can do to change this demand other than such additions which may come from the development of new products and new uses.

"Those of us who manufacture these converted products have experienced the first effect of the lessening in demand. The drop was quite severe in the latter part of February and in March. While there has not been any great improvement since then, it does appear that the rate of decline has not increased, and has, in fact, leveled off during recent weeks. The demand for paperboard has followed somewhat this pattern. The fact is, however, that during November and December of last year and during January and February of this year, our customers continued to build up inventories even though their consumption was decreasing at the time.

"It is significant to note, however, that in the parts of the Industry on which we have figures, inventories have shown a gradual decrease since the end of February—as an example, the inventories of container boards dropped from an all-time high of 553,300 tons on March 1, 1949 to 475,400 tons on May 1, and to 472,600 tons on June 1. This clearly shows that the consumption of this material has been in excess of production during that period.

"Also during the first half of 1949 we all know that our customers have been purchasing on a hand-to-mouth basis—they have bought only for their immediate current requirements. This is evidenced by the fact that we have never before received so many orders calling for relatively small quantities specifying quickest possible delivery.

"As we now review the situation, we can get a better idea of how this pattern developed.

"Under war-time controls, 1942 through 1945, there were not sufficient raw materials and labor to satisfy the demand for paperboard products.

"By the latter part of 1948 and in the early part of 1949, with increased facilities, manpower and transportation, it was no great problem to satisfy the then current demand plus the unfilled demand accumulated during the war.

"The pipe-lines were filled and well stocked by the latter part of 1948. The natural, and what might have been expected, consequence was that our customers, noting that paperboard and paperboard products, of good quality, were in ample supply, have purchased only their minimum current requirements. They felt that there was no longer any need for building up stocks of paperboard products when there existed a probability that they might be able to buy for less as the year progressed. Business activity and production have a habit of moving in cycles—up for a period—down for a period—but rarely on a continuous even keel. As our paperboard cycle has been on the down-side for some months now, it is reasonable to feel that we are now getting closer to the time when there will be some pick-up, and it is my own belief that, inasmuch as total paperboard production apparently has fallen below demand for several months now, and there are increasing evidences of shortages here and there in inventories, it will not be too long before we see evidences of at least bringing the demand for our products up to current consumption."

Attendance at the meeting totaled 78.

Comm'l Chemical Dev. Ass'n.

NIAGARA FALLS, N.Y.—The open meeting of the Commercial Chemical Development Ass'n., held at the Niagara hotel recently, brought forth fresh viewpoints in development techniques in the long established field of heavy tonage, inorganic chemicals. There was a special program of entertainment for the ladies, an innovation in C.C.D.A. meetings.

The morning session was opened by George F. Rugar, assistant manager, technical service division, Diamond Alkali Co., who acted as chairman. Following Dr. Rugar's remarks W. J. Riley, manager technical sales division, Westvaco chemical division, Food Machinery Corp., spoke on "Continuing Development of Markets for Old Chemicals." He discussed ways and means for carrying out a continuing program for development of new and expansion of old markets for the time tried bulk chemicals of commerce.

Taking "Hydrogen Peroxide" as his example, J. S. R. Reichert, manager, Peroxide Products Development, Electrochemical Department, E. I. du Pont de Nemours & Co., illustrated "how the market for a long-known chemical may be expanded through technical improvements in manufacture, distribution and applications."

At the luncheon, R. B. MacMullin of R. B. MacMullin Associates spoke on "The Chemical Industry of the Niagara Frontier."

In the opening paper of the afternoon session, L. S. Roehm, assistant general sales manager, Dow Chemical Co. caried on the theme of the meeting in "The Story of Hydrochloric Acid".

In the next paper, "Phosphorous Compounds", J. M. Gillett, director of industrial research, Victor Chemical Works, dealt historically with the development of the phosphorous compounds industry and the widely diversified current applications for those compounds.

The final paper, "The Place of Sulphuric Acid in the Heavy Chemical Industry", was presented by E. Wick Eddy, sales department, Texas Gulf Sulphur Co.

After social hour and dinner the meeting was brought to a close with an address on "Flavors, Spices and Perfumes", by E. C. Crocker of Arthur D. Little, Inc.

Training Directors' Conference

LAFAYETTE, Ind. — "Training — A Service and a Necessity" has been selected as the theme for the seventh annual midwest regional conference for training directors and management in business and industry, which will be held here at Purdue University, September 27-29.

Chapters of the American Society of Training Directors in seven mid-western states and cooperating with the university in sponoring the meeting. Training directors are expected from Indiana, Illinois, Iowa, Michigan, Missouri, Ohio, and Wisconsin.

Dr. E. Wight Bakke, director of the Labor and Management Center at Yale University, will delivery an address on "Principles of Human Relations and Training," at the opening session, September 27, following a welcome to the university by Dr. Frank C. Hockema, vice-president and executive dean.

The topic, "Organizing and Preparing Instructional Materials for Use in

here's why Coating Formulas

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Calgon*

For starch, casein, or animal glue pigmented coatings, your formula should include Calgon, for Calgon has pronounced deflocculating properties on such materials as clay, calcium carbonate, titanium oxide and other pigments and fillers, and also exerts a dispersive action on the adhesive.

As a result, the addition of a small percentage of Calgon gives a coating which is smoother, more uniform, and more firmly bonded to the paper. With Calgon, a larger proportion of solids may be used in the coating mixture, thus facilitating the drying operation. In casein coatings, less casein is required.

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industry," will be presented by a panel composed of W. C. Christensen, director of training, Eli Lilly & Co.; H. A. Dudley, director of training, Stewart-Warner Corp.; R. E. Lee, director of training, J. D. Adams Mfg. Co.; and R. M. Anderson, training department, H. P. Wasson & Co., all of Indianapolis. John R. Clarke, director of public relations, Stewart-Warner Corp., will give a summary of the fundamental principles outlined.

Kenneth Cook, director of sales training, American Central Division, Avco Mfg. Co., Connersville, Ind.; Wayne E. Grimm, associate director of the department of industrial education, Chrysler Corp., Detroit; and Karl D. Klein, director of training, Monsanto Chemical Co., St. Louis, will discuss "Methods of Preparing and Using Audio and Visual Aids in Industrial Training."

Kenneth Haagenson, director of public relations, Allis-Chalmers Mfg., Co., Milwaukee, will be the speaker at the annual banquet, September 28. His topic will be "Do They Know Anything Good About You?" Dr. B. L. Dodds, director, Division of Education and Appied Psychology, Purdue, will be toastmaster.

Another discussion, on "Attitude Changes—Basis for Education Programs Within Industry," will be presented by Dr. William M. Shanner, director of the International Harvester Research Project at the University of Chicago, and Dr. Roger Bellows, director of the management program, Wayne University, Detroit.

Following each of the Panel discussions there will be audience participation and discussion led by Don Phillips, assistant director of continuing education service, Michigan State College, Lansing.

N. Y.-Canadian Supt's. Meet

PLATTSBURG, N.Y. — The Fall meeting of the New York-Canadian division of the American Pulp & Paper Mill Superintendents Ass'n. will be held at the Champlain hotel at Bluff Point, September 8-10. In addition to the business sessions there will be various recreational attractions, including golf.

Stirling, Otness, Kimbark, SAPI's

CHICAGO—Three recent additions to the membership of the Western Division of the Salesmen's Ass'n. of the Paper Industry are: Thomas L. Stirling of the Oxford Paper Co., James V. Otness of the Minnesota & Ontario Paper Co., and Donald R. Kimbark of the Flambeau Paper Co., all of Chicago.

John Richey's July Itinerary

CINCINNATI—"My schedule of local market meetings during July is as follows," says John L. Richey, secretary-treasurer of the Paper & Twine Ass'n.: July 12—Noon luncheon, Illinois State Ass'n., Blackstone hotel, Chicago; dinner, 6:30 p.m., Chicago Paper Ass'n., Bismarck hotel. July 13—Noon luncheon, Wisconsin Paper Merchants Ass'n., Astor hotel, Milwaukee. July 14 — Noon luncheon, Michigan Paper Merchants, Rowe hotel, Grand Rapids. July 19 — Noon luncheon, Louisville Paper Merchants, Brown hotel, Louisville. July 20—Noon luncheon, Indianapolis Paper Merchants, Lincoln hotel, Indianapolis. July 26—Noon luncheon, Columbus Paper Merchants, Columbus Athletic Club, Columbus. July 27 — Cleveland Paper Merchants (Fine Paper, 11:00 a.m.), (Wrapping Paper, 12:30 noon), Cleveland hotel, Cleveland. July 28 — Toledo Paper Merchants (11:a.m., Fine Paper, followed by noon luncheon for both Fine and Wrapping Paper), Commodore hotel, Toledo.

Miami Valley Supt's. Meeting

HAMILTON, Ohio — The 1949 fall meeting of the Miami Valley division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., is scheduled for September 16, at the Elks Country Club, Harold C. Leighton of the Beckett Paper Co., chairman of the division reports.

Mr. Leighton adds that as in the past, members of the division will be entertained with golf and prizes by the Black-Clawson Co. The Annual election of officers also will be held during the meeting.

Exhibits at NSGA Fall Convention

NEW YORK — The fifth and sixth floors of Hotel Stevens will be given over to exhibits of paper and paper products during the Fall Convention of the National Paper Trade Ass'n., September 27-29.

MISCELLANY . . . .

Krug Reports on Alaskan Power

WASHINGTON—More than 8,000,000 kilowatts of hydro-electric capacity are available for development in Alaska, according to a survey of Alaskan water resources approved by Secretary of Interior Krug. Need of new power for the pulp industry was stressed.

The report, forwarded to the White House and other interested Federal agencies, points out that this potential is over half of the amount of hydro-electric power now developed in the U.S., and is more than three times the installed capacity of the TVA.

The survey was carried out by the Bureau of Reclamation under a 1949 appropriation, and is designed to furnish information to Congress as a basis for legislation, which would carry the Reclamation Bureau's operations into Alaska.

The Reclamation Bureau reported that "an immediate and urgent need for power development" exists, to meet civilian and military requirements in the Anchorage and Fairbanks area, and to supply existing and proposed defense installations.

"Additional power is needed for establishment of a pulp industry in Southeastern Alaska and for development of other resources", said the report.

The report compared Alaska's latitude with that of Norway, Sweden and Finland, and pointed out that these countries have a population density two and a half to five times the 5,000,000 population potential envisaged for Alaska under proper development.

The report sent to the White House contained a draft of legislation to initiate a reclamation program in Alaska, with a proposed letter to accompany such a draft in a message to Congress.

The survey was financed by an appropriation of $150,000 by the 80th Congress, covering fiscal 1949.

ECA Revises Procedures

WASHINGTON — Revised procedures for the submission of information by suppliers of Marshall Plan goods were outlined on July 7 by the Economic Cooperation Administration. The procedures, contained in amendments to ECA Regulation 1 governing execution of suppliers' certificates and invoice-and-contract forms, were initiated by ECA after suppliers objected to having all details of their transactions, such as commissions paid, generally known.

In the case of ECA financing by reimbursement to a participating country for payments made by it for procurement, the supplier may now submit a supplier's certificate in duplicate with invoice-and-contract abstract filled out except for information as to class of supplier, agents' commissions (domestic and foreign), and contract and price. However, these two copies must contain a certificate, signed by the supplier, that he has filled in completely a third copy and sent it to the ECA Controller, Washington, D. C.

Participating countries and banking institutions in the United States are being instructed that they are not to duplicate or reproduce any of the information contained in an invoice-and-contract abstract, except for their internal use, and are not to reveal the contents of the abstract.

In the case of financing by letter of commitment to a bank, the supplier will continue to fill out completely two copies of the invoice-and-contract abstract and submit them with the other documentation.

Canadian Price Outlook

TORONTO — Canadian manufacturers of fine papers report that demand for their products is being well maintained. The outlook for not only this third quarter of the year, but for the fourth and final quarter as well, appears to be extremely good. Moreover, it is generally believed present price levels will be maintained.

The decline in woodpulp prices is not likely to be reflected in lower prices for end products, according to fine paper manufacturers. High costs for

labor and other items will offset the lower prices for pulp, it is said.

Kraft paper manufacturers are working hard on research with a view to developing new uses. Wartime gains made by kraft paper makers in the packaging field are being consolidated.

Demand for kraft board, multi-wall bags, etc., was off slightly in the first half from last year. Manufacturers believe, however, that this may be a return to the prewar trend when late winter and spring months were traditionally slack periods. Over the balance of the year sales are expected to run at about the same level as 1948.

Canadian manufacturers of all types of paper and pulps are watching the U.S. market closely and are trying to avoid the chain reaction which takes place once prices are reduced. It is argued that this not only stops forward buying, but also lowers inventories because paper buyers begin to buy less than they use in the expectation that there will be a further drop in the price levels.

Finnmark Devaluation Puzzle

OTTAWA — There is widespread speculation now about the possible effects on woodpulp prices following the initial move by Finland in the devaluation of the mark so that the new rate of exchange puts 160 marks to the dollar or 646 marks to the pound, with this move reportedly aimed to increase Finnish exports to the west. In the first four months of this year, shipments of pulp from Finland to U.S. dropped approximately 83 percent, with other declines anticipated before this devaluation move was made.

In addition, pulp shipments have entered the European market under the so-called Marshall Plan financed by U.S. dollars and these have come to this market below Finnish prices. Consequently, this, too, is a problem which the devaluation move may try to overcome in order to compete for the business.

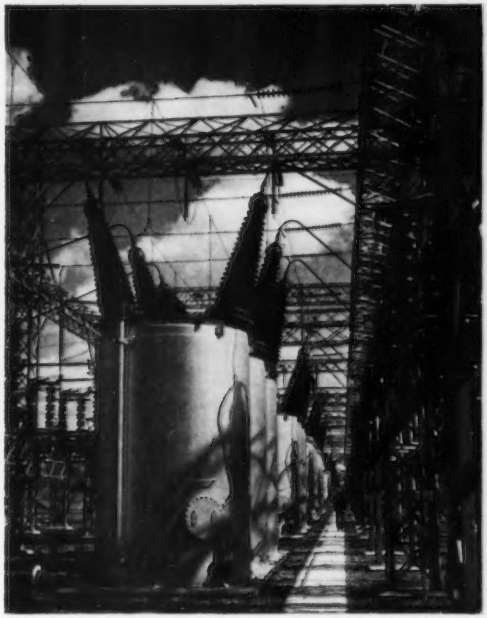
Of course, Canadian producers are interested in these developments if they should bring further significant price cuts in woodpulp, particularly in markets where Canadian shippers are doing or expect to do export trade, so that this effort by Finland to meet competition by devaluation is being watched closely.

Best Yeast, Ltd., Prospering

LIVERPOOL, N.S.—Best Yeast, Ltd., which started operations some years ago with a new process for the manufacture of bakers' yeast by using sugars from waste sulphite liquor from paper mills as the principal ingredient, has reported a net profit of $28,986 for the fiscal year ended Jan. 1, 1949, as compared with $589 for the six months ended Jan. 3, 1948, and net earnings amounted to $79,724 in year ended Jan. 1, 1949, compared with $31,965 in year ended June 28, 1947 or $19,583 in six months ended Jan. 3, 1948.

GRAND COULEE DAM

When President Truman pressed a gold key on his desk recently he set in commercial service the tenth main generator at Grand Coulee Dam on the Columbia River, 3,000 miles away . . . Shown here is the 230-kv switchyard on the west side at the Grand Coulee Dam. Here the power goes to the lines of the Bonneville Power Administration. Total power capacity of Grand Coulee will be 2,250,000 kilowatts.



The company's total current assets at Jan. 1, 1949 amounted to $221,362 against $201,828 for Jan. 3, 1948; total assets, $598,322 against $586,115; total current liabilities, $58,867 against $75,146; working capital, $162,495 against $126,682.

Since the first of the year the bank loan has been retired and there is now a substantial cash working capital available, General Manager P. E. King states. A dividend of 60 cents a share was declared on the preferred stock payable July 1 to holders of record June 15. The company has made steady progress and is now well established across Canada and throughout the West Indies, Mr. King states.

Wood Plastics Course Planned

SYRACUSE, N.Y.—Combining the resources of the departments of pulp and paper manufacture, wood technology, and forest utiilzation, the New York State College of Forestry at Syracuse University will introduce a new course in wood plastics beginning next fall. The new curriculum was approved by the college's board of trustees at their semi-annual meeting July 8.

Dean Joseph S. Illick of the forestry college commented on the new course as follows: "This is a distinctive feature of the new curriculum and promises to make graduates majoring in the course immediately valuable to the expanding wood plastics industry. Dean Illick said two new wood chemists would be added to the college staff on September 1 to step up the pace and scope of wood plastics research.

No Official Comment

OTTAWA—So far there has been no official comment on the report that New Zealand will investigate the prospects for obtaining her newsprint from non-dollar countries to help ease the sterling area's acute dollar situation. The bulk of newsprint now used in New Zealand is imported from Canada.

It is learned in official quarters that New Zealand has imported in the first quarter of 1949 the following from Canada, with figures for the same period last year being given in brackets: Newsprint, 21,853 (26,446) cwt., $103,729 ($122,961); paper board, n.o.p., 9,511 (13,339) cwt., $54,641 ($79,081); book paper, 5,634 (13,109) cwt., $51,378 ($138,922); wrapping paper, 76 (2,704) cwt., $6,983 ($32,743); handkerchief tissue of paper, $1,900 (nil); napkins and towels of paper, $5,897 ($62); toilet paper, 6,190 (3,473) cwt., $58,034 ($33,138), etc.

Philippines Growing Canadian Market

OTTAWA — Trade between Canada and the Philippine Islands should be stimulated with the establishment at Manila next autumn of a new office of the Canadian Trade Commissioner Service, with Canada's trade with the Philippine Islands having increased from $1,800,000 in 1938 to $16,252,000 last year, including among principal Canadian products sold there newsprint. F. H. Palmer, presently Canadian commercial counsellor in Stockholm, has been assigned to open the new office at Manila.

Canadian Rigid Insulating Board

OTTAWA.—Production of rigid insulating board in May declined from the preceding month but was higher than a year ago, a similar trend being shown for domestic sales, the Canadian Government announces. During the first five months of this year, output and sales both recorded sharp gains.

According to preliminary figures by the Canadian Government, output during the month amounted to 20,839,900 sq. ft. as compared with 21,731,000 in April and 18,415,000 in the same month last year. In the cumulative period, production rose to 105,831,300 sq. ft. as against 86,375,300 in the similar period of 1948.

Domestic sales in May totalled 20,122,800 sq. ft. compared with 20,141,800 in April and 16,064,400 a year earlier, bringing sales for the five-month period to 101,329,600 sq. ft. as against 73,627,500 in the like 1948 period.

Commodity Agreements Urged

OTTAWA—With the term "agricultural products" including forestry products, a demand that commodity agreements between governments should be regarded as a "basic method" of expanding international trade in agricultural products has been advanced by farm organizations from 25 countries at a recent meeting of the International Federation of Agricultural Producers held at Guelph, Ont., with the conference also adopting a plan proposed by the Canadian Federation of Agriculture for moving "embarrassing" surpluses of agricultural products to needy countries which cannot pay for them. Pulpwood was one of a list of commodities put forward as suitable for immediate consideration by a conference leading to an intergovernmental agreement.

"No Takers"

BUFFALO, N. Y. — Works Commissioner Elwin G. Speyer came up with a brand new excuse for Buffalo's littered streets at a meeting of the Common Council. It's all due to the waste paper market slump, Mr. Speyer explained.

The commissioner said sanitation trucks have taken on an additional daily load of from 50 to 100 tons since the bottom dropped out of the waste paper market. Junk dealers used to haul the paper away for salvage, he told the councilmen, but now they won't take it as a gift, so the sanitation trucks are forced to haul it away.

Asbestos Statistics Reveal Drop

OTTAWA.—The value of shipments in the asbestos products manufacturing industry of Canada dropped again to 73.9 in April this year compared with 77.6 in the preceding March and 128.6 in April last year, on the base of 1947 average being equal to 100, the Canadian Government reports.

Likewise, the value of inventories in this industry declined to 122.9 in April as against 127.8 in March and 123.7 in April a year ago. There was a drop in the value of stocks of goods in process in the industry, falling down to 99.4 in April against 121.9 in March or 133.7 in April last years, and similarly stocks of finished products declined to 122.1 in April this year compared with 129.6 in March, though still above the 103.3 of April last year. However, raw stocks of raw materials advanced to 134.0 in April this year as against 131.9 in March but below the 140.0 of April last year.

Canadian April Inventories Down

OTTAWA—The total estimated value of inventories of pulp and paper mills across Canada again declined in April this year, falling down to 137.2 compared with 139.5 in the preceding month of March and 140.8 in February or 140.7 in January, on the base of 1947 average being equal to 100, according to the latest nation-wide survey of such mills by the Canadian Government. A year ago in April, there was also a decline in April at 132.3 compared with 135.5 in March, though the first couple of months of that year witnessed a gradual increase in such estimated values, rising from 128.9 in January to 133.2 in February and 135.5 in March.

Canadian Import Fluctuations

OTTAWA — Imports of paper into Canada declined to $1,682,000 during April compared with $1,685,000 in the same month last year but advanced to a cumulative total of $6,635,000 during the first four months of 1949 ending April as against $5,886,000 in the corresponding period a year ago, the Canadian Government reports.

Imports into Canada of books and printed matter increased to $2,947,000 during April as against $2,836,000 in the same month a year ago and reached a total of $10,802,000 during the first four months of this year compared with $10,375,000 last year in the corresponding period.

Canadian Asbestos Exports

OTTAWA — Exports of asbestos and products from Canada declined to $1,257,000 during May this year compared with $3,691,000 in the same month last year, the Canadian Government reports, adding that such exports in the first five months of 1949 fell to a cumulative total of $8,042,000 as against $15,681,000 during the corresponding period a year ago.

Two First-Quarter Commercial Failures

OTTAWA—There were two commercial failures in the pulp and paper manufacturers during the first quarter of 1949 compared with one in the similar period of last year and one in the year previous, according to the latest nation-wide survey by the Canadian Government. In 1949, one of the bankruptcies occurred in the Maritime Provinces and the other in the Prairies.

Canadian Wholesale Prices

OTTAWA — The wholesale prices of newsprint and wrapping paper remained at 133.9 in April compared with 133.9 in March and February, though still above the 130.5 of April last year, on the base of 1926 being equal to 100, the Prices Branch of the Canadian Government reports.

However, the wholesale prices of pulp declined sharply in Canada in April, falling down to 179.3 as against 193.0 in March and February or 195.8 in April a year ago. Likewise, the wholesale prices of lumber dropped to 283.3 in April compared with 284.2 in March, though above the 281.6 in February and 256.3 in April last year.

H. & D. Richmond Plant Progress

RICHMOND, Va.—Construction of the $1,000,000 plant of the Hinde & Dauch Paper Co., fronting 400 feet on Petersburg Pike, is well advanced and the plant is expected to be ready for occupancy this fall. The new plant represents an expansion of the H. & D. operations here; for many years the firm has occupied a part of the plant of the David M. Lea Co. on Hopkins Road, but increased business of both companies necessitated the erection of the new plant.

The new structure is of steel, concrete and brick and will be equipped with the latest type of machinery for the manufacture of paper boxes, board and other paper products. Most of the plant's basic materials are supplied by the Southern Kraft Paper Co. J. M. Southall, who has been with H. & D. for more than 20 years, will continue as manager of the plant when the new building is completed. Architects for the new structure are Carneal & Johnston.

SUPPLIERS . . . . .

Warren Steam Pump Co., Inc., Warren, Mass., manufacturer of centrifugal and reciprocating pumps, is now in production of cradle mounted compacunits. These new items may be V-belt, turbine or motor driven. Sizes: 1″, 1½″, 2″, 3″. Capacities: 5 to 450 g.p.m. Heads: 15 to 250. Materials: standard, all iron, all bronze, or special metals to meet unusual requirements. Early deliveries on most sizes and standard materials.

Rust Engineering Co., Pittsburgh, is building a reinforced concrete silo, 70 feet high with a diameter of 40 feet, for Bird & Son, Inc., at Phillipsdale, R. I. The project, which will also include a conveyor to the wood preparation department, is designed to make possible sufficient storage of wood chips to eliminate present necessity of operating the chipper 16 hours a day.

Boiler Equipment Service Co., 686 Greenwood avenue, N.E., Atlanta 6, Ga., sales and engineering representative for the Cochrane Corp., Philadel-

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SERVING INDUSTRY . . . WHICH SERVES MANKIND

phia, in the Georgia and Florida territory for industrial water treating equipment and steam specialties has also been appointed representative for Cochrane for Alabama, less Mobile and Baldwin counties which are handled by the Allan J. Harriss Co. from New Orleans. E. A. Brooks, J. E. Fearon, D. T. Sheffield, W. C. Morrison, and C. G. Acree are the individuals covering this territory.

F. E. Schuchman has been elected president of the Homestead Valve Mfg. Co., Coraopolis, Pa. Beginning as a core maker in the foundry of the company which his father founded in 1892, he has worked in every department of the organization, and also holds the title of general manager and treasurer at the present time. W. R. Schuchman, another son of the founder, was named chairman of the board after 28 years as president, and J. E. Roth, former board chairman, was named chairman of the advisory committee. Other officers named were Bradley McCormick, secretary, and N. E. Kolesar, assistant treasurer.

Harold L. Gruehn, formerly sales representative in the Allis-Chalmers Milwaukee district office, has been named Midwest region dealer supervisor with headquarters in Chicago. Mr. Gruehn has been associated with Allis-Chalmers since 1941 and since 1945 has been specializing in paper mill industry and franchise products in the Milwaukee district sales office. The Allis-Chalmers Midwest region embraces branches in Davenport, Ia., and Rockford, Ill.

Charles Lukens Huston, first vice-president of Lukens Steel Co., Coatesville, Pa., marked his 94th birthday on July 8. For the first time since he joined the company as a clerk almost 74 years ago, he did not observe it by "working as usual." Mr. Huston is convalescing from a broken leg which he sustained in a fall several months ago. His birthday follows by six days the 139th anniversary of the founding of the Lukens firm which was started July 2, 1810, as the Brandywine Iron Works & Nail Factory.

Dr. Homer R. Duffey has been appointed by the Quaker Oats Co., Chicago, as general manager of the chemicals department, succeeding Dr. Lauren B. Hitchcock, resigned. Dr. Duffey will be in charge of production and development of furfural and related chemicals, manufactured by Quaker at plants in Memphis and Cedar Rapids.

John Hay Whitney, chairman of the board of the Freeport Sulphur Co., has been elected to the board of trustees of the National Planning Ass'n.

Andrew E. Buchanan, Jr., has been named assistant general manager of the rayon department of the du Pont Co., Wilmington, Del. At the same time, R. L. Richards, who became general manager of the department on July 1, announced that Donald F. Carpenter, who recently retired as chairman of the Munitions Board, will succeed Mr. Buchanan as an assistant manager of the department. Mr. Carpenter, before he accepted his appointment in the National Military Establishment in April 1948, was vice-president and assistant general manager of the Remington Arms Co., a du Pont subsidiary.

INDUSTRY EXECUTIVES VISIT LUKENS

Coatesville, Pa., July 7

Picture below ↓ and Pictures on Opposite Page →

Left to right: Henry D. Schmidt, president, Schmidt & Ault Paper Co., York, Pa.; E. A. Charlton, New York, (consulting engineer); K. A. Taylor, director of research, International Paper Co., Glens Falls, N. Y.; F. J. Lang, general manager, Dexter Sulphite Pulp & Paper Co., Dexter, N. Y.; G. E. Nicholson, vice-president in charge of manufacturing, Union Bag & Paper Corp., York, Pa.; G. L. Snyder, assistant manager, development engineering, Lukens Steel Co. (guide).

B. F. Goodrich Co., Akron, Ohio, is manufacturing Zipper belts for Stephens-Adamson, exclusive manufacturer of the Zipper belt conveyor. This new type belt is designed to meet the need for a conveyor-elevator system which can handle breakable materials gently, without contamination. It is particularly adapted to handle granular, flaky, pulverized or small lump material. Since the Zipper belt can travel horizontally, vertically, on a slope and around curves, it is extremely adaptable under conditions where space is limited. The rubber teeth on the belt can be locked, or unlocked, at any point by the use of rollers which operate on the same principle as the tab on a conventional slide fastener.

Canadian Sumner Iron Works is continuing to receive orders for pulp mill machinery. The final assembly of pulpwood chippers and the Bellingham log barker for the Associated Pulp & Paper Co., Burnie, Tasmania, and Australian Newsprint Mills, Boyer, Tasmania, has kept the plant busy for several weeks. Final delivery of this equipment will be made in August. The company has now received orders from Nanaimo Sulphate Pulp, Ltd., for Bingham pumps as well as for Sumner woodroom machinery including one 153″ whole log chipper and incidental machinery. The Columbia Cellulose Co. has placed orders for equipment for its new plant at Prince Rupert. These include another 153″ whole log chipper, a whole log Bellingham hydraulic barker, conveyors, hogs and helical gear speed reducers. Bloedel, Stewart & Welch have placed orders for an 84″ Sumner chipper and slab barker for their plant opened within the past year at Alberni, while additional equipment has also been ordered by the Powell River Co. and other B. C. plants.

Syco Mfg. Corp., Syracuse, N. Y., maker of paper-machine drives, has been bought by the Moore & White Co., Philadelphia. In disclosnig the purchase, George Lear, president of Moore & White, said all assets of the Syco company, among them the trade name and patents, are included in the sale. Mr. Lear also stated that Harry E. Smith, chief sales engineer for Syco, was joining the Moore & White staff as a sales engineer. The Syco drive unit will be manufactured henceforth in the Moore & White plant at 15th street and Lehigh avenue, Philadelphia, and will be sold exclusively by representatives of the company. All replacement parts and servicing for units now in use wil be furnished by Moore & White.

C. B. Hunt & Son, Inc., Salem, Ohio, manufacturer of Quick-As-Wink air and hydraulic control valves has introduced a new line of small single plunger valves known as Series "O" and "OE" valves. In the new lines the valve consists of an aluminum housing; a hollow stainless steel plunger with precision placed ports; carefully dimensioned brass spacers accurately positioned end-to-end on each other (not through packing); efficient "O" ring packers; and closing brass gland nuts and an aluminum push button. The valves are balanced and will remain in position until changed. A spring can be mounted between the

Left to right: Robert E. Read, Union Bag & Paper Corp., New York; R. W. Ward, engineering dept, Nopco Chemical Co., Inc., Harrison, N. J.; F. J. Schmitt of F. R. Schmitt & Son, Hollis, L. I., N. Y.; Wm. F. Ryan, engineering manager, Stone & Webster Engineering Corp., Boston; C. A. Grundberg (guide), development engineer, Lukens Steel Co.

Left to right: J. Edwin A. Warner, chief engineer, Robert Gair Co., Inc., New York; T. V. Sheahan, chief mechanical engineer, H. K. Ferguson Co., New York; D. M. S. Hagerty, E. H. Rollins & Sons, Inc., New York; William Funk (guide), development engineer, Lukens Steel Co.; R. P. Piperoux, chief development engineer, Celanese Corp., of America, Newark, N. J.

Left to right: R. C. Sahlin (guide), sales engineer, Lukenweld Div., Lukens Steel Co.; Dr. H. B. Hass, manager of research and development, General Aniline & Film Corp., New York; Alex. Goss, chief engineer, Mazer Paper Mills Div., Hudson Pulp & Paper Corp., Lansdowne, Pa.; Edward F. Egan of Frank W. Egan & Co., Bound Brook, N. J.

Left to right: S. Blum, chief engineer, H. M. Wilson Co., Philadelphia; W. C. Simpson (guide), sales manager, Lukenwald Div., Lukens Steel Co.; Morris Sayre, president, Corn Products Refining Co.; Herman L. Joachim, consulting engineer, Englewood, N. J.

Left to right: H. R. Stevens and Frank L. Califano, Flintkote Co., East Rutherford, N. J.; John F. Maguire (guide), engineer, (development), Lukens Steel Co.; C. R. Binner, chief engineer, H. K. Ferguson Co., Inc., New York; J. Verwayen, plant engineer, Gibraltar Corrugated Paper Co., Inc., North Bergen, N. J.

Left to right: Daniel H. Bathon, vice-president, Elk Paper Mfg. Co., Childs, Md.; Edward Manogue, superintendent of paper mills, Gibraltar Corrugated Paper Co., Inc., North Bergen, N. J.; G. L. McLuckie, engineer, Celanese Corp. or America, Cumberland, Md.; Dean Kohlhepp (guide), development engineer, Lukens Steel Co.

push button and gland nut when spring return action is desired. The flow is through the plunger and around the seals, (not through them) thus prolonging the life of the packing and valve parts, and reducing repairs and maintenance to a minimum. The valves can be completely disassembled for repacking, and reassembled in a few minutes without disturbing the connecting piping. These valves are suited for use with air, oil or water, at pressures up to 125 p.s.i. maximum (also vacuum), at normal temperatures (not exceeding 150°F.).

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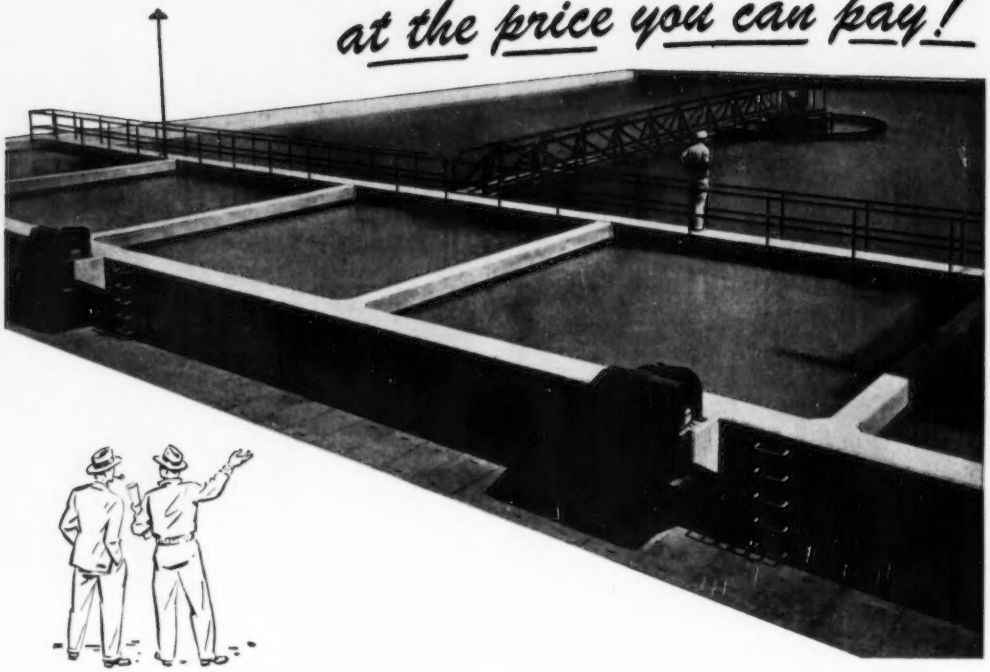

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RESEARCH ENGINEERING **DORR** EQUIPMENT

The Wood-Supply Situation in New York State

With Special Reference To Wood For Pulping

By

V. L. HARPER

Northeastern Forest Experiment Station, Upper Darby, Pa.

Trends Of Paper And Paperboard Production

Your program chairman has informed me that "Conservation of Materials" has been selected as the general theme of this meeting. It would certainly be difficult to think of any subject more important to the paper and paperboard industry of New York State than this one is. As a preliminary to the special topic that I am to discuss, I want to review briefly some general trends in the development of the pulp and paper industry in New York State, and to show where the industry procured the fibrous materials that it consumed in 1946.

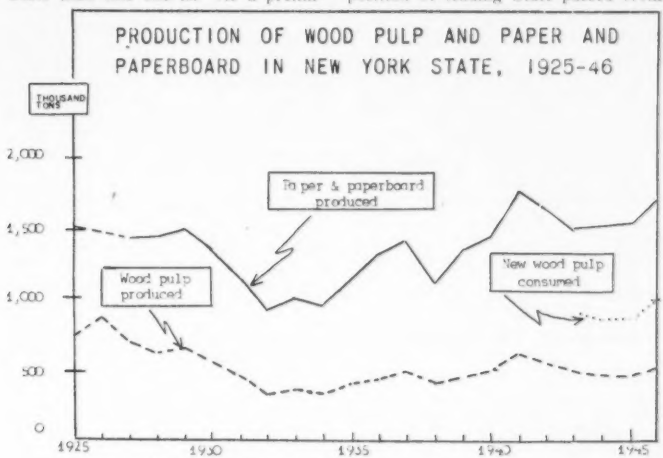

Figure 1.—Production of Paper and paperboard is on the increase, wood pulp output is declining.

Of course it is a well-known fact that New York State leads all its sister States in the manufacture of paper and paperboard. Several other States are now close rivals, but so far they have not been able to capture the leading position. The total output of paper and paperboard by New York mills—except for the three depression years 1932-34—has been well above the 1-million ton level. Since 1940 the output has been more than 1½ million tons annually and is still increasing (fig. 1).

This is certainly a great achievement. However, it should not lead to any attitude of complacent satisfaction. Paper and paperboard can be made only from fibrous materials, and no industry can be any sounder than its basic source of raw materials.

In the production of *wood pulp* the position of leading State passed from New York to Maine about 1914. In 1928, Wisconsin also forged ahead of New York. Washington passed into this company in 1931. By 1939, Louisiana was also producing more wood pulp than was coming from the mills of New York.

The current production of the New York pulp mills is at the ½-million ton level, having declined from twice that amount of annual output in the decade prior to 1921. Not for many years has it been possible for the output of New York's pulp mills to come within close range of the consumption of wood pulp by the paper and paperboard mills. The net deficit in recent years has been 400,000 to 500,000 tons (fig. 1).

The Sources of Fibrous Material

But this wood pulp deficit does not tell the whole story. For many years the New York pulp mills have been drawing heavily upon Canada for a substantial part of their pulpwood supply.

The New York State Division of Commerce has estimated that even as early as 1904 some 40 percent of the pulpwood consumed in New York came from Canada. In 1939, this same agency estimated, some 47 percent of the pulpwood consumed in New York came from Canada, and an additional 17 percent came from neighboring

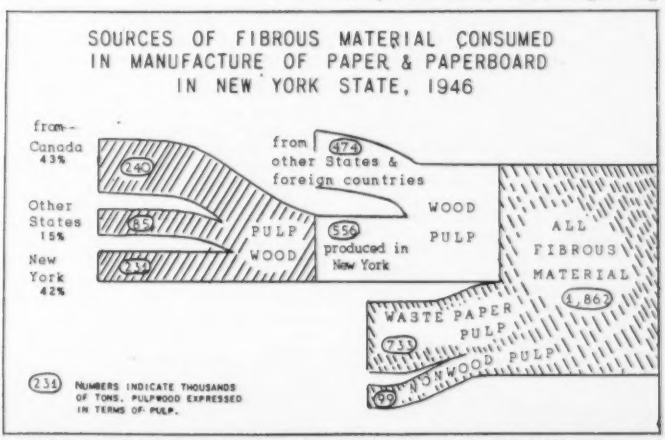

Figure 2.—Only a small part of the fibrous material comes from New York's forests.

Presented at the 1948 Annual Meeting of the Empire State Section of Tappi at Lake George, N.Y., June 2 to 4th.

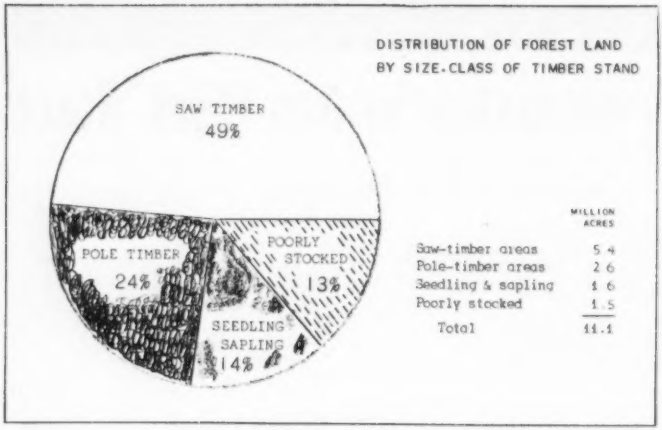

Figure 3.—About half the acreage is in young timber.

States. Home-produced pulpwood accounted for only 36 percent of the total consumption.[1]

The more recent situation with regard to the sources of fibrous materials consumed by the paper and paperboard mills is graphically illustrated in figure 2—based principally on Bureau of the Census information for 1946. That year a total of 1,862,000 tons of fibrous materials was used. Of this total, 1,030,000 tons were in the form of virgin wood pulp—composed of some 556,000 net tons that were made within New York State and 474,000 net tons that were brought in from other States and foreign countries.

Along with this virgin wood pulp, the mills used 733,000 tons of waste-paper pulp and 99 thousand tons of nonwood fiber such as rags and straw.

The 556 thousand tons of wood pulp that were manufactured within New York State can be allocated roughly according to the sources of the pulpwood from which it was made. Unpublished information from the War Production Board indicates that in 1944 some 43 percent of the pulpwood received at New York pulp mills came from Canada. It seems rather unlikely that conditions changed very radically between 1944 and 1946. On the basis of this supposition, it is estimated that about 43 percent of the pulpwood consumed by the New York mills in 1946 came from Canada. It also seems safe to estimate that 15 percent of the pulpwood consumed came into New York from neighboring States—chiefly Vermont and New Hampshire. The remaining 42 percent of the pulpwood consumed was, very probably, about the volume drawn from New York's forests.

In terms of pulpwood volume, the wood used in the making of pulp in the mills in New York State in 1946 amounted to about 700,000 cords. Of this, 300,000 came from Canada, 100,000 came from neighboring States, and 300,000 came from New York's own forests. The pulpwood equivalent of the manufactured pulp that was obtained from outside New York State would add up to about 600,000 cords—making the total pulpwood equivalent of all the wood pulp that was consumed in the making of paper and paperboard not less than 1,300,000 cords.

Balance this whooping figure against 300,000 cords that came out of New York's own forests and you can readily see that conservation of materials is a vital matter to the pulp and paper industries of the Empire State.

Estimates Of The Wood-Supply Situation

In considering New York's wood-supply situation, and especially the wood suitable for pulping, I am greatly handicapped by the lack of forest-survey information. This will not be the case a year or two hence because the Northeastern Forest Experiment Station (in cooperation with the State Department of Conservation) is now engaged in making a forest survey of the entire State. About 30 percent of the field work has been completed. Statistical reports for groups of counties on forest acreage, timber volumes, and on other aspects of the forest situation will be available before very long.

Meanwhile, the wood-supply situation in New York State can be described only by resorting to a set of estimates that were made by the Forest Service in 1945 as part of its nation-wide "reappraisal" studies. These estimates, in States like New York, which has not yet been covered by the forest survey, are subject to a considerable margin of error. This should be kept in mind constantly when considering the figures that I am now about to cite.

Table I

	Million acres	Percent
Farm woodland	3.6	32
Other private	6.7	60
Total Private	10.3	92
Public	.8	8
Grand Total	11.1	100

Extent Of The Forest Land

The total land area of New York State adds up to about 30.7 million acres. Of this, about 44 percent, or 13.5 million acres, is forest land. But of this total forest acreage, some 2.4 million acres—largely within the State Forest Preserves—are not available for commercial timber cutting. This leaves 11.1 million acres that can be classed as commercial forest land.

This distribution of this commercial forest acreage by principal types of ownership is shown in Table I.

The basic pattern is one of privately owned lands, with 32 percent of the total commercial acreage in farms and 60 percent in nonfarm private holdings. There are not many large industrial holdings like those that are common in northern New England, in the South, and in the West. The acreage held up by pulp companies is relatively small—660,000 acres. Only four companies have holdings that exceed 100,000 acres. The bulk of the 800,000 acres of public commercial forest land is owned by the State—more than half in reforestation lands that are on the way to restored production of timber.

Character Of The Forest Growth

It is customary to classify forest lands according to the size of trees in the timber stands that they bear. To classify as a saw-timber stand, an area must have an average timber volume of at least 2,000 board feet per acre in softwood trees that are 9 inches or larger in diameter at the breast height[2], and in hardwood trees that are 11 inches and larger. On the basis of this criterion, the saw-timber area in New York State adds up to about 5.4 million acres—slightly less than 49 percent of the total commercial forest acreage.

Pole-timber stands are defined as those that have trees too small and in insufficient volume to classify as saw-timber. A minimum tree size of 5 inches diameter at breast height and a minimum volume of 2 cords per acre are the lower limits of the pole-timber classification. New York State has about 2.6 million acres that fall in this pole-timber category.

Seedling and sapling stands occupy about 1.6 million acres of the commercial forest land. The remaining 1.5 million acres are in a poorly-stocked or denuded condition. The over all picture is shown graphically in figure 3.

This classification of forest land by size of trees does not, of course, tell the whole story. The matter of stocking is highly important. Here the picture is a rather sad one (fig. 4). Only about 29 percent of the commercial forest land, regardless of the size of

[1] New York State Division of Commerce. The Pulp and Paper Industries of New York State. p. 13. Albany. 1942.

[2] This measurement is taken 4½ feet above average ground level.

trees that it bears, is well stocked. About 45 percent is partially stocked. Some 26 percent is poorly stocked; hence it is at a very low level of productivity.

Estimates Of The Timber Volume In The Existing Stands

Over-all estimates of timber volume are usually expressed in terms of cubic feet, solid-wood basis. The pulp and paper industry, however, usually thinks of wood volume in terms of the standard rough-wood cord of 4-foot bolts, stacked 4 feet high and 8 feet long. Although this unit occupies a space of about 128 cubic feet, the solid-wood content is much less than 128 cubic feet.

Conversions of cubic feet solid wood volume to cords can be made roughly on the basis of 78 cubic feet per cord for softwoods and 65 cubic feet per cord for hardwoods. The smaller converting factor for hardwoods is due largely to the fact that the sticks are usually more crooked, knots are bigger, and hardwood volume estimates include a certain amount of limb wood.

The total volume of timber now standing on New York's commercial forest land adds up to about 140 million cords. Of this total, about 85 million cords are in trees of saw-timber size. About 55 million are in trees of pole-timber size.

Breaking this over-all estimate down still further, we find that there are about 33 million cords in the softwood species and 107 million in the hardwood or broadleaf species. There are, in other words, about 3 cords of hardwood to every cord of softwood.

Let me push the analysis still further and break down the softwood and hardwood volume into the principal species. This is important because present pulping equipment and technology can economically utilize only a limited number of species—particularly spruce and fir, hemlock, aspen, and limited quantities of white pine and of the dense hardwoods.

Volume estimates by principal species are available only for the timber of sawlog size. They have been derived largely from the statistics of lumber production; hence they probably do not give due weight to volume in some of the less-preferred species. It is also probable that the species composition of the existing pole-timber stands does not correspond exactly to that of the saw-timber stands. Therefore, these data can be no more than a rough approximation of the species distribution of the softwood and hardwood timber volumes. Bear these important qualifications in mind. The species breakdown is shown in Table II.

Table II

	Million cords	Percent
Softwoods		
Spruce and fir	12	9
Hemlock	12	9
White and Norway pine	8	5
Others	1	1
Total softwood	33	24
Hardwoods		
Aspen	6	4
Birch, beech, maple	80	57
Oaks	10	7
Others	11	8
Total hardwoods	107	76
All species	140	100

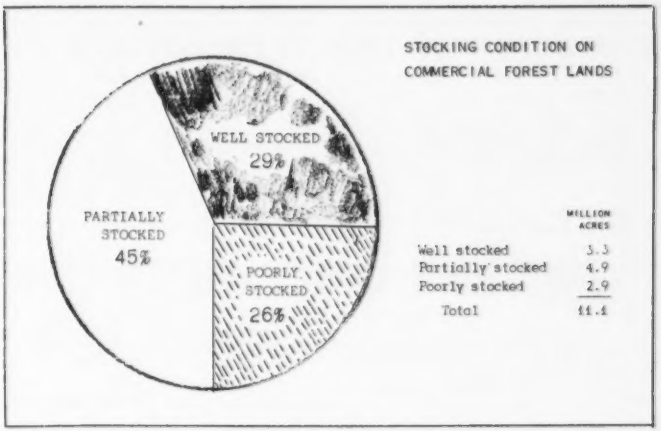

Figure 4.—Inadequate stocking is a critical problem.

If the species distribution obtained by this method is even within shooting distance of the true facts, as I believe it probably is, the growing stock in those species that are preferred for pulping is far below what it should be to meet the needs of New York State's pulp and paper industry. A growing stock of 30 million cords of spruce and fir, hemlock, and aspen is far too little to satisfy the needs of an industry that is annually consuming 700,000 cords of pulpwood and could probably use 500,000 to 600,000 cords more if it were available.

Current Annual Growth Of The Existing Stands

Estimates of current annual timber growth made in connection with the Forest Service's reappraisal studies indicated that the net annual growth in the softwood species amounts to about 1.1 million cords of which 500,000 cords are in trees of saw-timber size and 600,000 are in trees of pole-timber size. The net annual growth in the hardwood species amounts to 4.7 million cords, of which 2.6 million is in saw-timber trees and 2.1 million is in pole-timber trees.

Translated into terms of percentage increase of present growing stock, the softwood growth represents a rate of 3.3 percent per year. The corresponding rate for the hardwood growing stock is 4.4 percent per year. These rates are reasonably good. The chief reason for their failure to yield the volume of wood that is needed traces back to scarcity of adequate growing stock—in other words, to the run-down condition of the forests.

Furthermore, the growth is heavily weighted by hardwoods—4.7 million cords as against 1.1 million cords of softwood. This also is due in large part to cutting practices that have allowed hardwoods to take over large areas that formerly bore mixed stands of hardwoods and softwoods. This, of course, is usualy poor forest management. And it is highly detrimental to the long-term interests of the pulp and paper industry, which needs all that it can get of the softwood species—particularly spruce and fir and hemlock.

Relationship Of Growth And Drain

There is a tendency in many discussions of the forestry problem to put too much emphasis on the growth-drain relationship and to draw comforting inferences whenever it can be shown that the over-all growth exceeds the total drain. The significant question is not whether the total growth exceeds total drain—important as that relation may be—but whether the forest lands are growing timber at a rate reasonably commensurate with their productive capabilities, and whether such timber is of the species, size, and quality needed by the dependent wood-using industries.

Softwood saw timber usually has a broad range of commercial uses and for that reason it is under heavy pressure. Forests that still show an unfavorable balance of growth and drain in softwood saw timber are not in a condition that can give much assurance to the pulp and paper industry. While it is true that the pulp industry can utilize trees of less than saw timber size, it is not very economical to do so. About 60 percent of the pulpwood cut in New York in 1944 came from trees of saw-timber size.

The situation in New York State is by no means the poorest that can be found in the United States, or even in the Northeast. The overall timber

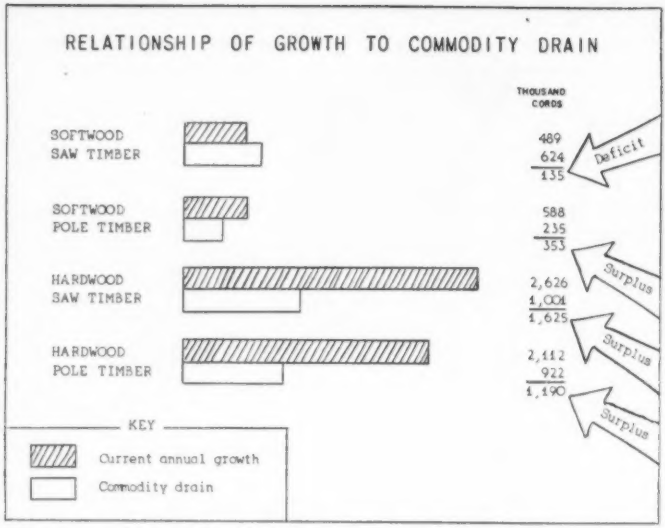

Figure 5.—The bulk of the current growth is in the hardwoods.

growth does exceed total drain by a substantial margin.

However, for the most critical product, the softwood timber of sawlog size, the commodity drain alone exceeds the current growth by 28 percent. And this does not count additional losses from fire, insects, and tree diseases.

Here is the condition that spells continuing forest decadence even while total timber volume is on the increase. Careful analysis of the estimates that are available indicates that if there is any net increment in total softwood volume at all—including trees of pole-timber size, and taking into account the fire, insect, and disease losses—it certainly cannot be very large. Less than 20 percent of the current growth is in the softwood species (fig. 5). There are as yet virtually no indications that softwood growing stock is building up to meet future needs.

The substantial surplus of hardwood growth over the present commodity drain is large enough to sustain the losses to fire and pests and still give a sizable net increment in volume. It seems pretty clear that New York's pulp industry is going to be compelled to turn more strongly to hardwoods. The pressure in this direction will increase notably as the Province of Ontario implements its recently announced policy of reducing the export of pulpwood cut from Crown lands by 10 percent per year.

What Can Be Done To Obtain More Adequate Supplies Of Pulpwood?

The question of what can be done to obtain more adequate supplies of pulpwood for the mills of New York State is one for which there is no easy answer. Increased utilization of hardwoods has just been mentioned, but it is no panacea. With present papermaking technology and without drastic changes in mill equipment, the volume of hardwood that can economically be used will increase gradually—barring, of course, some revolutionary new discovery. But even in that event, the supplies of hardwood timber are not unlimited. They would soon go the way of the softwoods if they were not put under forest management.

The second avenue of attack is, of course, an intensification and expansion of the present forestry program administered by the State Department of Conservation. This provides, among other things, for on-the-ground advice and technical help for the small woodland owner in the management of his forest property and in the marketing of his forest products. The cooperative State-Federal program of forest protection is reasonably effective insofar as fire is concerned, but still rather weak when it comes to protection against forest insects and tree diseases. Further planting of abandoned farm land to restore it to forest production, along with a greatly expanded program of cultural work on existing plantations, is highly desirable.

As a third and most important line of attack on the pulpwood-supply problem, I want to propose that the pulp and paper industry of New York State consider some bold steps that would take it into the business of growing more of its own timber. This has been the trend elsewhere.

What has been the cost of inadequate local pulpwood supplies over the past 50 years? There is no way that we can get a precise answer to such a question, but some simple arithmetic will provide an approximate answer. The State Division of Commerce estimated that the average price of pulpwood delivered at the New York mills in 1939 was about $3 per cord higher than the corresponding price at competing mills in the State of Maine. This unfavorable differential in the cost of wood at New York mills was likewise recognized in the administration of war-time price controls. It is a long-term handicap that originates partly in the scarcity of local pulpwood supplies and partly in the heavy rail transportation cost that must be paid on wood shipped in from Canada and from neighboring States. It is likely to grow even more serious as time goes on. A $3 per cord differential on the 700,000 cords of pulpwood that were consumed in 1939 amounts to more than $2 million. Thirty years ago the per-cord differential may have been much less, but the mills were consuming twice as much wood.

It is, therefore, not beyond reason to estimate that the policy of depending on out-of-state sources of pulpwood, over the past 50 years, has cost the New York State pulp industry between $50 and $100 million in added transportation and other charges. While this sum is not a big one in comparison with the total raw materail costs over the period, it is sufficient to have paid for a large acreage of forest lands and for some rather intensive forest management on them.

"But," one might say, "that is water over the dam. The money is spent and gone. What can be done now?"

Yes, the money has been spent. But that is no reason for not recognizing that timber is a crop and for not launching into the business of growing it. Dependency upon distant sources of pulpwood supply has brought the industry face to face with the dismal situation described above. A continuation of this policy offers no hopes of more favorable conditions. Why not turn to more aggressive forestry as the logical solution? It cannot provide the needed wood supplies next year nor the year after, but in a relatively few years it can begin to show results. And in the long run it could assure a permanent raw material foundation for the pulp industry.

Under moderately intensive forest management, New York's forest lands are capable of fairly high rates of timber production. The entire wood requirements of the State's pulp and paper industry could probably be grown, on an eventual sustained yield basis, on 2 million acres of forest land. This is less than 20 percent of the total commercial forest area. The technical know-how of forest management is no more difficult to acquire than the technology of pulp and paper making. A splendid State College of Forestry is already available to train the technical foresters that would be needed.

The total acreage held by the pulp industry, as previously mentioned, adds up to about 662,000 acres. In 1944

about 25 percent of the pulpwood consumed by the New York State pulp mills came from company-owned forest lands within the State. The present situation is probably not radically changed from that which prevailed five years ago. If the pulp industry should adopt the policy of growing at least half of the pulpwood that it consumed, it could probably do so before many years—first by intensifying the forest practices on the lands that it now owns, and second, by acquiring additional lands that would increase total forest holdings up to a level somewhere between 1 and 1½ million acres. The rest of the wood supply, logically, might be obtained from lands not company-owned. This would be highly desirable in order to provide assured markets for timber from thinnings and other improvement cuttings.

The pulpwood-supply problem of New York State's pulp industry can be solved. Why not tackle it with real determination? This is no time for defeatism or faint courage. Our country needs this great industry. The people of New York need it. Most of all the industry needs to rid itself of the raw-material starvation spectre that has been haunting it for these many years.

Rosin and Other Extractives from Ponderosa Pine Stumps[1]

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Abstract

The examination of well-seasoned ponderosa pine stumps for extractives indicate that this forest waste may be a potential commercial source of rosin, resin, terpenes, and other extractives. Ponderosa pine stumps, which have seasoned eight years and longer, were found to average about 500 pounds of acetone-soluble extractives per ton of stumpwood. The extract consists largely of a rosin, with smaller amounts of gasoline-insoluble resins, and volatile terpenes. Stump removal for extractive recovery and other uses would not only make the cutover and selectively logged areas more adaptable to advanced forest management and improved reforestation practices, but would likewise be another step in further utilization of western pine forest areas.

In a previous investigation dealing with the distribution of extractives in ponderosa pine (*Pinus ponderosa*), the largest quantity of this component was found in the butt log nearest the stump (2). This suggested that ponderosa pine stumps may contain sufficient quantities of extractives to warrant their removal and subsequent processing for extraneous components. Stump removal would be conducive to better forest practices and management, making the cutover and selectively logged areas more adaptable for reforestation by natural propagation or tree farming methods. Further, should stump processing for extractives prove to be feasible commercially, this would be another step toward fuller utilization of logging waste in the western pine area.

In order to evaluate this logging waste, a preliminary study was made on the quantity and nature of acetone-soluble extractives from ponderosa pine stumps which remained in the ground from several months to five years (4). These stumps were from mature stands, varying from 13 to 49 inches in diameter and, in most instances, the stump was sound throughout. Thus, it is important to note here, the samples for analysis from these stumps represented the entire stump, including sapwood as well as the heartwood. Such stumps were found to average about 17 per cent acetone-soluble extractives and the extract contained varying proportions of resin acids, unsaponifiables, esters, free fatty acids, and volatile terpenes, approximately in that order. It was further established that the heartwood of the stump contained approximately three times as much extract as the adjacent sapwood. Thus it is apparent that if only the richer heartwood were used in extraction, a material increase in extractive yield would be realized over that obtained from the whole stump containing both sound sapwood and heartwood.

It is well known, that if pine stumps are allowed to remain in the ground much beyond five years, that the sapwood begins to disintegrate due to decay, and with the bark, begins to slough-off, leaving a core of sound heartwood. This second stumpwood investigation is concerned with the quality and nature of acetone-soluble extractives from mature ponderosa pine stumps which have remained in the ground for eight or more years.

Quantity of Extractives

Table I lists the yields of extractives obtained from 72 well-seasoned or aged stumps. While the extract content for the various sites examined varied from 20.6 to 35.5%, the over-all yield amounted to 28.8% or 576 lbs. of extract per ton of moisture-free stumpwood. While the average yield of extract from all stumps taken from a particular area may vary, as indicated, the yield obtainable can be governed, largely by employing stump selection procedures. With a little training, stump removal crews can readily select only those stumps which will produce the higher quantities of extract.

The previous analysis of ponderosa pine stumps which seasoned from 0 to 5 years averaged about 388 lbs. of extract per ton of moisture-free stumpwood (4). As indicated the lower extract content of relatively "fresh" stumps is due to the presence of sapwood, while in the aged or well-sea-

Table I

Acetone-Soluble Extractives from Ponderosa Pine Stumps

Location	No. of Stumps Extracted	Approx. Elevation Feet	Stump Seasoned Years	Extractives % (a) Dry Basis Range	Dry Basis Average	Green Basis Range	Green Basis Average
Omak, Wash.	9	3200	10	27.4-46.6	35.5	25.1-43.7	33.1
Goldendale, Wash.	10	2500	8	11.7-43.5	25.8	10.5-41.2	23.6
Bend, Ore.	8	4900	10	16.1-45.9	33.1	13.3-42.9	30.2
Seneca, Ore.	8	5200	10	16.9-32.9	24.2	16.5-31.0	22.7
Kinzua, Ore.	6	3300	11	15.3-43.2	27.1	11.5-39.0	22.1
Westwood, Calif.	5	5000	32	29.7-44.0	34.7	26.3-40.8	30.9
Chester, Calif.	10	4500	19	21.0-44.4	31.3	15.3-39.5	27.1
McCloud, Calif.	6	3500	9	19.0-39.5	30.2	15.1-34.4	25.2
Window Rock, Ariz.	5	7700	56	16.7-30.7	25.5	15.5-29.1	23.9
Window Rock, Ariz.	5	7800	46	13.0-32.5	20.6	11.8-30.3	19.1
Average				18.6-40.3	28.5	16.1-37.2	25.8

(a) Based on weight of stumpwood.

(1) The first four articles in this series appeared in 1944 (1), 1946 (2, 3) and 1947 (4).

(2) Present Address: Rt. 9, Box 968, Portland 2, Oregon.

ACKNOWLEDGEMENT: The author is indebted to George Schroeder, George I. Garin, and Ernest Kolbe for collecting the stumpwood samples.

Table II

Approximate Composition of Stump Extractives

Location	Stumps Seasoned Years	Yield Extract % Green Basis	H_2O plus Ether Insoluble	H_2O Soluble	Volatile	NaOH Soluble: Resin Acids	NaOH Soluble: Other Acidic Materials	NaOH Soluble: Esters	Unsaponifiables
Omak, Wash.	10	33.1	0.2	1.3	12.4	56.4	10.1	8.5	11.1
Goldendale, Wash.	8	23.6	0.9	1.8	8.3	48.6	23.6	8.5	8.3
Bend, Ore.	10	30.2	1.7	1.7	11.8	54.3	17.6	5.7	7.2
Seneca, Ore.	10	22.7	0.8	1.5	6.1	41.9	29.0	10.3	10.3
Kinzua, Ore.	11	22.1	2.6	2.4	11.0	39.9	22.5	8.4	13.2
Westwood, Calif.	32	30.9	0.3	1.1	9.8	51.9	16.8	7.0	13.1
Chester, Calif.	19	27.1	0.3	0.9	14.8	53.6	13.5	7.7	9.2
McCloud, Calif.	9	25.2	0.6	1.0	14.8	51.8	15.4	7.7	8.7
Window Rock, Ariz.	56	23.9	1.3	1.9	3.2	43.9	28.2	10.0	11.5
Window Rock, Ariz.	46	19.1	1.8	2.8	5.0	41.6	25.9	10.0	12.9
Average		25.8	1.0	1.6	9.7	48.4	20.3	8.4	10.6
Lbs./ton of stumps		516	5.2	8.3	50.1	249.7	104.7	43.3	54.7

soned stump, the more anemic sapwood has generally sloughed off leaving the richer heartwood.

The practice of the southern pine wood rosin processing industries is to allow the stump to remain in the ground ten years or so, before processing. These selected well-seasoned pine stumps are reported to analyze approximately 18% water, 5% terpene oils, 22% rosin, and 4% gasoline-insoluble rosin (31% total extractive) or about 620 lbs. of extract per ton of green stumpwood (6). On the other hand, the average well-seasoned ponderosa pine stump will yield about 10% water and 25.8% total extractives of 516 lbs. per ton of green stumpwood. It would appear, that with any degree of selection, sound, well-seasoned ponderosa pine stumps will approach the yields of extractives obtained from southern pine stumpwood.

The number of stumps available will vary from several to as many as 36 or so per acre, depending upon nature of cut-over stand. The height of the stump above ground level may be from 12 inches and up to as much as 3 or 4 feet, while the sound portion of the stump may be from 6 inches or so to several feet in diameter. Thus the amount of recoverable stumpwood, including roots, may vary from several hundred pounds to as much as 5 tons or so per acre. The latter quantity of stumpwood would yield around 2500 pounds of extractives.

Nature of Stump Extractives

Table II gives the approximate composition of ponderosa pine stump extract from 10 different sites. The analyses indicate that the extract contains the following main components, named in approximate order of quantity present: (1) resin acids, (2) other acidic materials, (3) unsaponifiables, (4) volatile terpenes, and (5) esters. In general, it appears that the per cent resin acid content increases with increase in extract yield. Also, the composition of stump extractives is not expected to be effected materially from stumps of comparable extract content.

In order to compare the nature of stump extracts obtained from well-seasoned stumps versus fresh stumpwood, the acetone-soluble extract from a number of stumps which had seasoned two years near Bend, Oregon, was analyzed. This extract was analyzed in essentially the same manner as reported here, except that the free fatty acid content was likewise determined in the resin acid-free acidic fraction by preferential esterification with ethanol and sulfuric acid. This modified procedure was likewise applied to the 10 year seasoned stump extract from near Bend, Oregon reported in Table II. The results of this comparative analysis are reported in Table III.

The percent yields of each extract component here are based on weight of extract and on weight of moisture-free stumpwood, in order to better evaluate composition differences. It will be noted that both the resin acid and volatile terpene yields are several times greater from the well-seasoned stump when compared with the amounts obtained from fresher stumpwood. This would indicate that the predominating effect occurring in the transition of sapwood to heartwood is the synthesis of volatile terpenes and resin acids.

The crude acetone soluble extract, free of volatile terpenes is a dark red-brown, semi-hard resinous material. A considerable amount of the color bodies can be removed from the crude material by the selective solvent action of petroleum solvents free of aromatic hydrocarbons. Accordingly, some crude volatile-free extract was refined by refluxing one part by weight of extract with four parts by weight of petroleum ether (b.p. 50-70°C) for one hour, cooled, and filtered. Approximately 15 to 20% of the extract (color-bodies) remained undissolved. The petroleum ether was removed by distillation and the last traces of high-boiling residual terpenes removed under vacuum distillation at 200-250°C. The resulting rosin is usually H or I grade based on the rosin color scale and has a softening point of 70-72°C. (ring and ball). This particular sample of ponderosa rosin, so prepared, and a sample of southern pine wood rosin (Hercules "N") were analyzed according to the method already described and the results are reported in Table III.

The composition of southern pine wood rosin above is in fair agreement with the characteristics of N wood rosin reported by Humphrey (6).

It is apparent that these particular rosins differ in percent composition. The ponderosa rosin contains more esters and unsaponifiable material (resenes), and less resin acids than southern pine rosin. The commercial value of ponderosa rosin is still to be determined and pilot plant quantities are being prepared for market research survey studies. The results of this survey, together with continued research as to methods of refining, entity segregation, and characterization studies, will aid materially in evaluating the new type of rosin and other extractive products obtained from ponderosa pine stumps.

Table IV

Comparison of Rosins from Ponderosa and Southern Pines

	Ponderosa Pine Wood Rosin	Southern Pine Wood Rosin
Resin Acids	66.2%	85.2%
Other Acidic Materials	12.3	4.4
Esters	8.8	5.1
Unsaponifiables	12.7	5.3

Table III

A Comparative Composition of Fresh and Well-Seasoned Stump Extractives

Per Cent (a)

Stump Seasoned Years	Yield Extract Dry Basis %	H_2O Plus Ether Insoluble	H_2O Soluble	Volatile	Resin Acids	Fatty Acids	Other Acidic Materials	Esters	Unsaponifiable
2	20.1	0.8	2.4	6.0	37.1	10.3	22.1	9.7	11.6
		0.16	0.48	1.20	7.46	2.07	4.44	1.95	2.33
10	33.1	1.7	1.7	11.8	54.3	5.7	11.9	5.7	7.2
		0.56	0.56	3.91	17.97	1.89	3.94	1.89	2.38

(a) First figure in each column, per cent based on weight of extractives; lower figure, per cent yield based on moisture-free stumpwood.

Application of Results

The determination and analysis of acetone-soluble extractives from well-seasoned, sound ponderosa pine stumps indicate that this forest waste material is a potential new commercial source of rosin and other extractive products, including volatile terpenes and resins. If this new industry is established in the western pine region, which includes twelve western states, not only will the cutover and selectively logged areas become more adaptable to advanced forest management and improved reforestation practices but the value of western pine forest areas will likewise be enhanced.

In 1934, it was estimated that the wood naval stores industry was responsible for annually clearing approximately 200,000 acres of cutover southern pine lands and releasing them for agricultural uses (7). However, wood resin production has increased materially during the past decade resulting in a substantial increase in amount of cutover acreages cleared annually. These stumps are generally from first growth stands and this source is gradually being depleted. The present southern pine lumber production is largely from young second growth stands and these stumps, which consist largely of sapwood, are too anemic in extractive content to warrant processing. On the other hand, many millions of acres of ponderosa pine stumps are an untapped potential source for the commercial production of extractives.

Pilot plant quantities of ponderosa pine stumpwood extract have been isolated to be processed into several different products for purposes of conducting a market research survey. This evaluation survey will help to determine whether the solvent extraction of this stumpwood is practical on a commercial basis.

Method of Sampling

Nine holes were bored with an auger to the pith of each stump as previously described (4). The borings from each stump were thoroughly mixed and sent to the laboratory for analysis. From five to ten stumps were sampled at each site. Trained and experienced foresters collected these samples. At each site, the stumps for sampling were chosen at random to give, as nearly as possible, the total yield of extractives that could be expected if all the sound stumps in the area were removed and procesed. In some instances, very little disintegration had taken place, leaving the whole stump practically intact and sound and measuring up to three feet or more in diameter. Such stumps usually contained a very narrow band of sapwood or the sapwood had been injured in some manner, such as fire scarred, leaving the sapwood rich in extractive content, which is not very amendable to the normal subsequent decaying processes. Generally, the stumps which originally measured up to as much as several feet in diameter had distintegrated leaving a sound core of varying dimensions. In each case, all the decayed wood was removed prior to sampling, so as to include only the sound portion of the stump for analysis.

Samples from 72 stumps taken from ten sites and four states — namely, Washington, Oregon, California, and Arizona are included in this investigation.

Extraction and Analysis

The stump borings were ground in a Wiley mill to pass a 2mm. screen. Weighed amounts of each sample, in duplicate, were extracted in all-glass Soxhlet extractors with c.p. acetone for 8 hours and the quantity of extract determined as before (4).

The extract from all the samples from each site was combined and analyzed for steam volatiles, water and ether insolubles, water solubles, resin acids, other acidic materials, esters and unsaponifiables. Except for the sodium hydroxide soluble components, the same procedure for analysis as reported previously was used (2). Recently, Harris reported that the total resin acids present in rosin, gum oleoresin, or tall oil can be nearly quantitatively precipitated as the very insoluble cyclohexylamine salts from any medium in which they exist (5). This procedure, likewise, appears to be very suitable for determining the total resin acids content in ponderosa pine extract. The previously used method as described by Wolff and Scholze, involving preferential esterification of the fatty acids with ethyl alcohol and sulfuric acid is adequate for determining quantity of resin acids and fatty acids in mixtures known to contain only these acidic materials (8). However, the method is not applicable to complex mixtures which contain other acidic reacting substances, such as phenolic compounds. Since the sodium hydroxide soluble portion of the ponderosa extract contains other substances, in addition to resin acids and fatty acids, the total precipitation and determination of resin acids with cyclohexylamine was used and is described briefly as follows:

The ethyl ether soluble portion of the extract was thoroughly extracted in a separatory funnel with 3% sodium hydroxide to remove all acidic materials. Dilute hydrochloric acid (5%) was added to the alkaline solution to precipitate the acid fraction and the latter was recovered by extraction with ether. The ether solution was transferred to a separatory funnel and washed with 10% aqueous sodium chloride until neutral to Congo red and the ether removed on a water bath. The acidic residue was dissolved in three parts by weight of acetone to which was added a slight excess of 50-50 solution (by weight) of cyclohexylamine (Monsanto Chemical Co.) in acetone. The mass of crystalline salts, which immediately formed, was agitated and set aside in an ice-box overnight. The salts were then filtered and washed carefully with cool, fresh acetone until free of non-resin acid entities. The salts were transferred to a separatory funnel containing ether and shaken vigorously with an excess of 5% hydrochloric acid until the amine salt crystals had disappeared. The dilute aqueous acid solution was re-extracted twice with ether and the other solutions combined. The total ether solution was washed free of hydrochloric acid with 10% sodium chloride followed with water. The washed ether solution was transferred to a tared flask, ether removed by distillation on water bath. The flask containing the resin acids was dried in 105° oven to constant weight and weighed as total resin acids.

The filtrate and washings from the resin acid amine salts were combined and acidified with dilute hydrochloric acid and the acetone removed by distillation. This acidic residue was dissolved in ether and transferred to a separatory funnel. The mineral acid salt of the amine and free hydrochloric acid were removed by washing with dilute sodium chloride followed with water. The ether solution was transferred to a tared flask, ether removed by distillation, and residue dried in 105°C oven until weight constant. This residue was weighted as "other acidic materials" and is a complex mixture containing varying proportions of sodium carbonate soluble and insoluble substances. Fatty acids appear to be present, since a portion of this fraction readily forms ethyl esters when preferentially esterified at room temperature with ethanol plus sulfuric acid. Also a portion of the sodium salts of the sodium carbonate insoluble fraction readily reacts with chloracetic acid, forming the corresponding ether, which would suggest the presence of phenolic compounds. These reactions and others would suggest that the non-resin acid portion of the sodium hydroxide soluble fraction is a complex mixture of, among other products, modified resin acids, fatty acids, and phenolic type substances. The further characteristization of this fraction, as well as the other constituents in ponderosa pine stump extract, is being continued.

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(1) Anderson, Ind. Eng. Chem. *36*, 663 (1944).
(2) Ibid, *38*, 450 (1946).
(3) Ibid, *38*, 759 (1946).
(4) Ibid, *39*, 1664 (1947).
(5) Harris, U. S. Pat. 2,419,211, April 22, 1947.
(6) Humphrey, Ind. Eng. Chem., *35*, 1063 (1943).
(7) Palmer, Ibid, *26*, 703 (1934).
(8) Wolff and Scholze, Chem. Ztg., *38*, 869-70 (1914).

PATENT ABSTRACTS

2,459,764—Purification of native sulfur. Frank M. Yeiser, Buffalo, N. Y., assignor, by mesne assignments, to Niagara Research Corporation, Buffalo, N. Y. Filed June 14, 1945—Issued Jan. 18, 1949.

A method of purifying raw native sulphur containing contaminations including dirt particles, sulphuric acid and moisture but free of such contaminations as arsenic and antimony which consists in mixing with said sulphur an acid-neutralizing material chosen from the group consisting of oxygenous compounds of calcium and barium, the chosen material being added in a state in which it is capable of combining with sulphuric acid and moisture contaminants in the sulphur with the production of products which are insoluble in molten sulphur, the quantity of material which is added being in substantial excess over the quantity required for combination with said acid and moisture contaminants and thereupon conducting the sulphur in a molten state through a filter consisting in part at least

of an acid-reactant metal whereby the sulphur contaminations and the added neutralizing material in combined and uncombined state are removed from the molten sulphur conducting said contaminated sulphur.

2,459,581 — Resinous mixed esters containing a pentaerythritol. Frank G. Oswald, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del. Filed Dec. 20, 1944 — Issued Jan. 18, 1949.

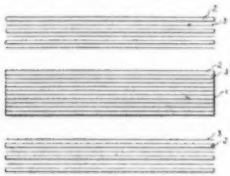
A stable, oil-soluble, resinous mixed ester of a pentaerythritol esterified with only a rosin acid and sebacic acid, said rosin acid being combined with all except from 0.1 to 2 of the hydroxyl groups presented by the pentaerythritol and the sebacic acid being combined with 50% to 100% of the remaining hydroxyl groups.

2,459,803—Feltlike products. Carleton S. Francis, Jr., Chestnut Hill, Pa., assignor, by mesne assignments, to American Viscose Corporation, Wilmington, Del. Filed Oct. 23, 1949 — Issued Jan. 25, 1949.

A felt-like product formed from a mixture of textile fibres and thermoplastic staple resin fibres formed from a copolymer of vinyl chloride and vinyl acetate, said resin fibres being normally non-tacky, flexible and tough, and being rendered tacky at a temperature below that at which the textile fibres are damaged, fibres in said product being bonded to each other due to the thermal tackiness after heating of said staple resin fibres, said resin fibres being present in such minor proportion that the outer surfaces of the finished felt are substantially non-adhesive when said thermoplastic fibres are in a tacky condition.

2,459,851—Ligno-cellulose die-stock and process of making. Charles F. Story, Laurel, Miss., assignor to Masonite Corporation, Laurel, Miss., a corporation of Delaware. Filed Dec. 31, 1941—Issued Jan. 25, 1949.

Process of making thick dense slabs having high bond strength from steam treated and exploded ligno-cellulose fiber material and containing a low percentage of water solubles, which comprises the steps of providing a plurality of dense and relatively thin ligno-cellulose fiber boards from the materials described, adjusting the moisture content of said boards to about 3-8%, subjecting a stack of said boards sufficient to make a core not to exceed 1¼ inches thick with intermediate films of heat reactive resin glue to pressure of at least 1000 pounds per square inch while applying to the stack surfaces heat sufficient to melt and set the glue through to the center of the stack but not so great as to cause material detrimental effect at the stack surfaces, cooling the stack while under the stated pressure, then applying a plurality of like boards to each face of the core slab so produced with films of said glue in position for gluing said boards to one another and to the core slab, subjecting the stack so produced to heat and pressure as aforesaid, and cooling the resulting slab when the new glue films have set and while still maintaining the pressure.



2,459,874—Coating Composition and sheets coated therewith. Robert E. Fay, Jr., Bridgeport, Conn., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed March 14, 1947 —Issued Jan. 25, 1949.

The method of preparing an artificial leather which is highly resistant to abrasion which comprises coating a sateen fabric running 1.12 yards per pound per 53" width material with a composition having the following composition:

Copolymer of butadiene and acrylonitrile	pounds.. 40
Complex terpene resin (advagum)	do.... 8
Camel whiting (calcium carbonote)	do.... 12
Stearic acid	ounces.. 6
Zinc oxide	pounds.. 2
Non-heat hardening phenolic resin	do.... 4
Cumarone resin	do.... 4
Benzothiazol disulfide	ounces.. 10
Sulfur	do.... 10

applying sufficient of the said composition until 3¼ ounces of non-volatile material is applied per linear yard of 50" width material, allowing the solvent to evaporate, and then applying 11 ounces per yard of 50" material of a composition having the following formula in parts by weight:

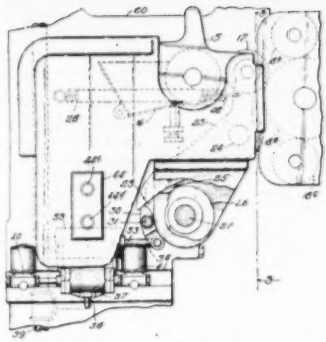
Polymerized chloroprene	100.0
Copolymer of butadiene and acrylonitrile	100.0
Chlorinated polyethylene (65% chlorine)	35.0
Release agent	6.0
Zinc oxide	70.0
Magnesium oxide	50.0
Calcium carbonate	45.0
Ground leather	45.0
Light process petroleum oil	10.0
Colored pigments	30.0
Benzothiazyl disulfide	4.0
Sulfur	4.0
Phenyl salicylate	0.4

2,459,891—Pressure sensitive adhesive mass. William L. Nelson, Highland Park, and Otto R. Sinnig, New Brunswick, N.J., assignors to Johnson & Johnson, a corporation of New Jersey. Filed July 22, 1944—Issued Jan. 25, 1949.

As a spreadable pressure sensitive adhesive mass a mixture of 20-35% partially cured, rubbery butadiene-styrene copolymer; 5-15% polyisobutylene of a molecular weight of 80,000 to 120,000; 5 to 20% tackifying resin; 10 to 25% of a plasticizer composed of a major amount of low molecular weight, high viscosity liquid polyisobutylene and a minor amount of a high viscosity mineral oil; and 20 to 35% of a filler.

2,459,922—Liquid feed control, particularly for the ink feed of printing presses. Curtis S. Crafts, Oak Park, Ill., assignor to Goss Printing Press Company, a corporation of Illinois. Filed Dec. 27, 1946 — Issued Jan. 25, 1949.

In printing apparatus: a plurality of feed arrangements, each arrangement including a printing liquid supply source, distributing apparatus, a device for delivering printing liquid from said source to said distributing apparatus, and power operated control apparatus for controlling operation of said delivery device, said power operated apparatus being movable between a first position where it prevents said delivery device from delivering printing liquid to said distributing apparatus and a second position where it permits said delivery device to deliver printing liquid to said distributing apparatus; electrical control apparatus for automatically controlling operation of said power operated apparatus between said first and second positions; and switch apparatus for reversing the position of a selected



one of said control apparatuses with respect to the other control apparatus.

2,459,952—Stabilized alkaline vegetable protein solutions. Alfred Frank Millidge, Conventry, and Claude Leonard Knight, Kenilworth, England, assignors to Courtaulds Limited, London, England, a British company. Filed Jan. 17, 1947—Issued Jan. 25, 1949.

An aqueous alkaline solution of vegetable protein which is suitable for extrusion in the manufacture of threads and which contains as a stabilising agent, a cyanide from the group consisting of the alkali metal cyanides, the alkaline earth metal cyanides and ammonium cyanide, said cyanide being present in an amount not exceeding about 0.1 per cent based on the weight of the solution.

2,459,955—Polyvinyl acetate emulsion adhesive. George Osman Morrison, Thomas Patton Gladstone Shaw, and Joseph Donat Paul-Emile Mercier, Shawinigan Falls, Quebec, Canada, and Henry Michael Collins, Stamford, Conn., assignors to Shawinigan Chemicals Limited, Montreal, Quebec, Canada. Filed Nov. 9, 1945 — Issued Jan. 25, 1949.

An adhesive composition comprising (A) a stable aqueous emulsion of polyvinyl acetate formed by emulsion polymerization, said emulsion having a viscosity within the range from 100 to 5000 centipoises at 20° C. and containing as emulsifiers (a) gum tragacanth within the range from 0.25% to 1.0% by weight of the emulsion, (b) partially hydrolized polyvinyl acetate, which contains from 16% to 35% by weight of polyvinyl acetate, within the range from 0.25% to 0.75% by weight of the meulsion, and (c) an anionic surface-active agent, said polyvinyl acetate having a viscoisity (measured at 86 grams per litre in benzene at 20° C.) greater than 20 centipoises and being present in an amount ranging from 40% to 60% by weight of the eumlsion; (B) a plasticizer for polyvinyl acetate selected from the group consisting of dimethyl phthalate, diethyl phthalate, diamyl phthalate, diioamyl phthalate, dibutyl phthalate, dimethoxy ethyl phthalate, dibutoxy ethyl phthalate, butyl-carboxy-methyl butyl phthalate, ethyl-carboxy-methyl ethyl phthalate, ethyl-carboxy-methyl methyl phthalate, acetyl triethyl citrate, O-nitrodiphenyl, dimethyl sebacate and monobutyl benezene sulphonamide, in an amount ranging from 20% to 180% by weight of the polyvinyl acetate; and (C) nitrocellulose, of less than 100 seconds viscosity, present in an effective amount of up to 20% by weight of the polyvinyl acetate.

PRICES

The prices below reflect general market quotations applying to those standard grades in which the normal volume of business is being done.

NEW YORK

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mill, Varying Freight Allowances

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.25/$6.75
No. 1 Wrapping Rolls	7.00/ 7.50
Standard Bag	5.75/ 6.25

Tissues— per ream 24x36 (480) 10/11 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$160.00/ —
Wh. No. 1 M. G.	150.00/ —
Wh. No. 1½	150.00/ —
Wh. No. 2	1.17½/ 1.20
Kraft Anti-Tar	1.45 / 1.50
Shrd. Wh. No. 1 per lb.	.11½/ —

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/ —
Bleached 4½x4½	6.95/ —
Bleached 4½x5	8.80/ —
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	$5.75/ —
Bleached 4½x4½	6.80/ —
Per Case of 100 rolls—1000 sheets	
Facial, 4½ x 5, 2 ply	$8.95/$9.45

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'd 10x12	3.60
Br. Jr. M'tif'd 9½x9¾	3.10
Br. Jr. Sgl. fold 10x10¾	3.15
Bkhd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50
Wrapping Manila	8.75/ 10.50
Printing Manila	10.00/ 11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$65.00/ —
Plain Chip	65.00/ —
Bkhd. Mla. L-d. Chip*	92.50/ —
White Pat. coated*	110.00/
Kraft Liners 42 lb.	100.00/
Kraft Corr. .009	105.00/
Binders Boards	110.00/116.00

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—

White, 20 lb.

Bonds

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers

White, 20 lb.

Bonds

	4 Ctns. per cwt.
No. 1	$17.50/ —
No. 2	16.65/ 16.75
No. 4	15.60/ 15.95

Ledgers

	4 Ctns. per cwt.
No. 1	$18.80/ —
No. 2	18.05/ —

White Book

Conversion Coated	Case per cwt.
No. 1	$20.75/$20.90
No. 2	19.50/ 19.65
No. 3	18.15/ 18.90
Machine Coated	
No. 1	16.40/ 16.65
No. 2	14.90/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 16.65
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

WORLD WOOD PULP MARKETS

Third Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.50/ —	125.00/128.00		
Sulphate, Unbl'd North'n	— / —	82.50/105.00	94.00/ —	with	
Sulphate, Unbl'd South'n	80.00/ —				
Sulphite Bkhd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Bkhd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

WASTE PAPER MARKET

Prices to Mills. Quotations Nominal
F.O.B. Shipping Point (Per Ton)

	New York July 11	Philadelphia June 6	Boston June 11	Chicago July 7
No. 1 Mixed Paper	$2.00/ $3.00	$2.00/ $3.00	Nominal	$5.00/ —
Boxboard Cuts	2.00/ 3.00	3.00/ 4.00	— / 5.00	8.00/ —
Mill Wrappers	14.00/ 15.00	8.00/ 10.00	— / 9.00	7.00/ —
No. 1 News	7.00/ 8.00	5.00/ 7.00	— / 9.00	11.00/ —
Over-issue News	15.00/ 16.00	10.00/ 12.00	8.00/ 10.50	14.00/ —
Corrugated Containers	9.00/ 11.00	7.00/ 8.00	8.00/ 10.50	12.00/ —
New Corrugated Cuts	13.00/ 15.00	18.00/ 20.00	16.00/ —	15.00/ —
Double Kraft Ld. Corr. Cuts	30.00/ —	25.00/ 30.00	25.00/ —	25.00/ 30.00
Used Kraft Bags	25.00/ —	15.00/ 17.00	25.00/ 30.00	15.00/ —
No. 1 Brown Kraft Paper	25.00/ —	20.00/ —	25.00/ —	15.00/ —
Super Resorted Br. Kraft	25.00/ 30.00	30.00/ —	40.00/ —	30.00/ —
New Br. Kraft Env. Cuts	55.00/ 60.00	60.00/ 65.00	60.00/ 65.00	50.00/ —
New Br. Kraft Cuts	40.00/ 45.00	55.00/ —	45.00/ —	45.00/ —
No. 1 Gdwd. Shvs.	15.00/ 20.00	12.00/ 15.00	25.00/ —	16.00/ —
White Newsblanks	45.00/ 50.00	60.00/ 65.00	—/ 50.00	30.00/ —
No. 1 Flyleaf Shvs.	25.00/ 30.00	15.00/ 20.00	35.00/ 40.00	30.00/ —
No. 1 Soft Wht. Shvs.	65.00/ 70.00	60.00/ 65.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	85.00/ 90.00	65.00/ 70.00	80.00/100.00	65.00/ —
Hd. Wht. Shvs.	80.00/ 90.00	70.00/ 75.00	80.00/ —	80.00/ —
Hd. Wht. Env. Cuts.	95.00/100.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts.	60.00/ 70.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	25.00/ 30.00	25.00/ 30.00	— / —	30.00/ —
Manila Tab Cards	60.00/ 65.00	55.00/ 60.00	65.00/ 75.00	50.00/ —
No. 1 Mixed Ledger	27.50/ 30.00	20.00/ —	37.50/ —	30.00/ —
White Ledger	35.00/ 40.00	30.00/ 32.50	45.00/ 50.00	40.00/ —
Mixed Books & Mags.	7.00/ 8.00	4.00/ 5.00	12.00/ —	7.00/ —
No. 1 Rep'd Hvy. Books & Mags.	15.00/ 17.00	8.00/ 10.00	22.00/ 23.00	20.00/ —

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .45
Unpolished—Paper Makers	.32¼/ .34½
Tube Rope	.33¼/ .35½
Wrapping	.36 / .38¼
Cotton	.58 / .60
Polished Cotton	.55 / —

(Hard Fiber)

Mex. Sisal	.21 / .27

(American Hemp)

Polished Hemp	.45 / .48
Unpolished	.35 / .37½

Rag Market

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/ $10.50
Unbleached Muslin	10.00/ 10.50
Light Silesias	7.00/ 7.50
White Back Blue Overalls	6.25/ 6.50
Blue Overalls	6.00/ 6.25
Fancy Shirt	4.50/ 5.00
Percales	5.50/ 6.00
Light Prints	5.50/ 6.00
No. 1 Washables	2.75/ 3.00
Bleachable Khaki	5.00/ 5.50
Unbleachable Khaki	4.50/ 5.00
Cottonades	4.25/ 4.75
Lt. Flannelettes	7.00/ 7.50
Men's Corduroy	3.50/ 4.00
Women's Corduroy	3.00/ 3.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
No. 1 Whites, Repacked	$4.25/ $4.75
No. 1 Whites, Miscellaneous	3.50/ 4.00
No. 2 Whites, Repacked	2.75/ 3.00

No. 2 Whites, Miscellaneous	**2.00/**	**2.25**
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.25/	1.35
No. 2 Roofing Rags	1.00/	1.20
No. 3 Jute Bagging	**.95/**	**1.05**
No. 4 Brussels & brd. Bck'd crpts.	**.90/**	**1.00**
Roofing Bagging	**.80/**	**.95**

New Foreign Cotton Cuttings
(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	
New Mixed Cuttings	
Light Silesias	prices
Light Flannelettes	
New White Cuttings	are
New Unbleached Cuttings	
Fancy Shirt Cuttings	nominal
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags
(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	prices
Extra Light Prints	
Old Light Prints	
Med. Light Prints	are
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	nominal
Dark Cottons, European	
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging
(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny, No. 1	**$7.50/**	**$8.00**
Domestic Gunny, No. 1	7.50/	8.00
Heavy Wool Tares	6.50/	7.00
No. 1 Scrap Bagging	**4.75/**	**5.00**
Foreign Manila Rope	**5.50/**	**5.75**
Domestic Manila Rope	**5.50/**	**5.75**
Jute Strings	**6.25/**	**6.50**
No. 1 Sisal Strings	5.00/	5.25
Mixed Strings	**1.15/**	**1.30**

PHILADELPHIA

Domestic Rags (new)
(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
White Shirt	**$10.25/**	**$10.50**
Fancy Shirts	5.00/	5.25
Light Silesias	**6.75/**	**7.00**
Unbleached Muslin	**10.00/**	**10.25**
Light Prints	**5.25/**	**5.50**
Washable No. 1	2.75/	3.25
Blue Overall	**6.00/**	**6.25**
Percales	**5.50/**	**5.75**
Unbleachable Khaki	3.50/	4.00
Bleachable Khaki	4.50/	5.00
Men's Corduroy	3.75/	4.25
Ladies' Corduroy	3.25/	3.75
Cottonades	3.75/	4.00

Domestic Rags (old)
(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
Mixed White	$3.00/	$3.50
Thirds and Whites Repacked	2.40/	2.50
Cotton Pants & Overalls	2.75/	3.00
No. 1 Roofing Stock	1.05/	1.15
No. 2 Roofing Stock	.95/	1.05
Roofing Bagging	.75/	.90

Bagging
(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
Old Manila Rope	$5.50/	—
Foreign Gunny No. 1	**8.00/**	**—**
Domestic Gunny No. 1	**8.00/**	**—**
Sisal Strings No. 1	3.50/	—
No. 1 Scrap	4.50/	5.00
No. 1 Jute Rope	6.00/	—

BOSTON

Bagging
(F.o.b. Boston)

	Per 100 lbs.	
Foreign Gunny	8.00 /	8.50
Domestic Gunny	8.00 /	8.50
Domestic No. 1 Old Rope	6.00 /	6.25
Foreign No. 1 Old Rope	**6.50 /**	**—**
Mixed Strings	1.35 /	—
Transmission Rope—Domestic	**3.00 /**	**3.50**
Jute Carpet Threads	**— /**	**4.00**
Bleachery Burlap	**— /**	**9.00**
Scrap Burlap—		
Foreign	— /	5.75
Domestic	— /	5.75
South America	6.00 /	6.50
Austr. Wool Pouches	**8.25 /**	**—**
New Zealand Wool Pouches	**— /**	**6.00**
New Burlap Cuttings	**8.50 /**	**—**
Heavy Baling Bagging	7.50 /	8.00
Paper Mill Bagging	— /	5.00

Domestic Rags (new)
(F.o.b. Boston)

	Per 100 lbs.	
New Light Prints	5.75 /	6.00
Fancy Percales	6.00 /	6.25
White No. 1 Shirt	10.00 /	10.75
Light Flannelettes	**— /**	**7.00**
Canton Flannels, Bleached	**— /**	**9.00**
Underwear Cutters, Bleached	10.75 /	11.25
Underwear Cutters, Unbleached	10.00 /	10.25
Blue Overalls	5.75 /	6.25
Soft Unbleached	9.75 /	10.50
Blue Cheviots	5.75 /	6.25
Fancy Shirt	**4.00 /**	**4.50**
Washable	**3.25 /**	**3.50**
Khaki Cuttings	**5.00 /**	**5.25**
Men's Corduroy	**4.50 /**	**—**
Khaki Canvas	— /	5.50
B. V. D. Cuttings	10.00 /	10.25

Domestic Rags (old)
(F.o.b. Boston)

	Per 100 lbs.	
No. 1 Whites, Repacked	3.00 /	3.50
No. 1 Whites, Miscellaneous	2.50 /	3.00
Twos and Blues, Repacked	— /	2.00
Cotton Pants & Overalls	2.50 /	2.75
No. 1 Roofing Stock	1.00 /	1.10
No. 2 Roofing Stock	.90 /	.95
Roofing Bagging	— /	.70

MARKETS

Blanc Fixe

Prices firm. Demand moderate. Supply adequate. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Prices steady. Demand easy. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Market dullness pronounced. Argentine market further unsettled by 13½c price stipulated in Anglo-Argentine pact on 2,700 tons a year to Britain. Current prices on processed acid precipitated casein at 19 to 21 cents per pound for domestic grades and 19½ to 20 cents for imported grades, f.o.b. shipping point, car lots.

Caustic Soda

Prices firm. Supplies available for prompt shipment. L.c.l. sales reported at competitive levels. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 per cent in tank cars at $2.50 per cwt., at works.

Soda Ash

In free supply. Demand easier. Prices firm. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Starch, Corn

Demand fair. Supply ample. Pearl grade currently quoted at $4.82 per 100 pounds; powdered starch at $4.93 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Market unchanged. Moderate paper demand. Idaho quantities limited to warehouse. High grade quoted at $7.00 cwt., l.c.l., ex N. Y. whse. Supply tight. Ample Maine supply quoted $4.75, f.o.b. Maine warehouse; pearl grade, $4.60 cwt. f.o.b. Maine.

Sulphate of Alumina

Prices firm Supply good. Demand steady. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Prices firm. Demand sustained at good level. Supply good. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Prices steady. Demand continues ahead of supply. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

Tapioca Flour

New supplies begin to arrive. Superior high range from $9.85 to $11.00 cwt.; high grades $8.60/$9.50 cwt., on dock Atlantic and Gulf ports; medium grades range from $8.25/— cwt. on dock, N. Y.

Titanium Dioxide

Prices firm. Supply reported now in balance with eased demand. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

China Clay

Prices firm. Demand easier, supply of domestic and imported ample. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Prices firm. Supply condition tightened by seasonal water requirements. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Prices rise 5c as market strengthens. Export business is developing. Gum rosin in drums

Merchants' Inventory Analysis—Middle West

Source—Paper & Twine Ass'n.—Date, July 6

Averages as reported for each market

(Number of Days Sales)	*Kraft*	*Butch.*	*Groc. Bags*	*Gum. Tape*	*Ind. Towels*	*Wrap. Tissue*	*Toilet Paper*
Chicago, Ill.	65	..	60	45	45	45	45
S. Bend, Ind.	60	40	..	30	15	60	30
Marion, Ind.	30	60	60	10	45	..	60
Davenport, Iowa	30	60	15	30	60	30	30
Flint, Mich.	30	90	60	60	45	60	45
Lansing, Mich.	45	45	45	10	45	30	60
Cincinnati, O.	50	35	45	65	55	60	60
Columbus, O.	45	45	35	45	45	10	30
Toledo, O.	90	21	21	21	30	60	14
Green Bay, Wis.	45	45	30	45	20	30	30
Madison, Wis.	60	30	30	15	60	60	30
Manitowoc, Wis.	30	30	10	20	10	10	10
Milwaukee, Wis.	45	45	45	40	35	35	45
Oshkosh, Wis.	30	30	60	20	10	..	..
Racine, Wis.	75	75	120	60	75	60	75
Wausau, Wis.	30	16	35	43	30	60	53

per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, H. I, K, $6.53; Savannah; B, $4.25; FF, $5.50.

Rosin Size

Supply good. Demand steady. Seventy percent gum and pale wood grades, tank cars, $5.45 to $5.55 f.o.b. southern shipping point.

Salt Cake

Prices cut $2.00 a ton. Demand fair. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

FOREIGN

Argentina Inviting Public Tenders

NEW YORK — Argentina is inviting public tenders from industrialists who may want to invest in a newsprint plant in that country. The Argentina government notice states that it wants one or more plants with a total capacity of not less than 100 tons daily capacity (30,000 tons a year). Some companies are said to have expressed a desire to see an engineer's report on the economics of newsprint manufacture in the country before submitting a bid. Such a report would cost $15,000 to $20,000, it is stated.

Once the technical, economic and moral responsibility of the offer is proved, Argentina will make a number of concessions to the successful bidder. It will: (a) Grant exchange permits for machinery, equipment, etc., and exempt such items from customs duties. (b) Give priority in the assignment of fuel and power quotas to the newsprint plant, as well as for materials necessary for its installation. (c) Supply pulpwood required in the necessary quantities "at the most convenient price." (d) Allow free entry into the country of technical and labor personnel specializing in the industry. (e) Include the paper producing industry among those listed as of "national interest".

The Argentina embassy has additional particulars with hespect to the tender, it is understood.

Polish-Indian Trade Pact

NEW DELHI — Under the agreement signed with the Polish Trade Delegation, then touring the country, India will receive many commodities at present being imported from hard-currency areas, such as newsprint, states Richard Grew, Commercial Secretary for Canada.

Indian Jute Acreage Increased

WASHINGTON—Jute acreage in India for the 1949-50 season is reported at 1,047,605 acres, 282,000 above the previous year, the Department of Commerce has been informed. Expected production for the current season is 2,816,575 bales, 790,000 above the previous season.

India Withdraws Internal Control

NEW YORK — Effective June 14, all internal control on newsprint was withdrawn in India. Its import from soft areas continues to be covered by Open General License.

FINANCIAL RECORD

	Per Share Earnings		Indic.	July 12
	Calendar Year 1948	12 Mo. to Approx. 3/31/49	Annual Divid. Rate	Approx. Market Price
PREFERRED STOCKS				
Armstrong Cork Co. $3.75 Cum.	$46.33*	$46.33*	$3.75	95¼
Armstrong Cork Co. $4.00 Cum. Conv.	46.33*	46.33*	4.00	107½
Celotex Corp. 5% Cum.	26.42e	15.31i	1.00	15¾
Champion Paper & Fibre $4.50 Cum.	61.80j	99.97f	4.50	93¾
Container Corp. of Amer. 4% Cum.	105.41	104.24	4.00	95¾
Crown Zellerbach $4.20 Cum.	59.10(c)	63.54g	4.20	96¼
Crown Zellerbach $4.00 Cum. Conv. 2nd	55.88c*	60.21g*	4.00	90¼
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	11.71	2.50	47
Flintkote Co. $4 Cum.	83.25	74.66	4.00	99
Robert Gair Co., Inc. 6% Cum.	17.08	15.96	1.20	15
International Paper Co. $4 Cum.	263.00	265.18	4.00	96½
Johns-Manville $3.50 Cum.	209.89	217.72	3.50	104½
Kimberly Clark Corp. 4½% Cum.	80.74	77.94	4.50	104
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	46.40	4.00	92½
MacAndrews & Forbes 6% Cum.	62.23	62.60	6.00	132½
Mead Corp. 4¼% Cum.	73.46	71.12	4.25	73½
Mead Corp. 4% Cum. Conv. 2nd	29.91*	28.84*	2.00	31⅞
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	158.51	4.00	103½
Rayonier Inc. $2 Cum.	16.43	15.72	2.00	28⅝
St. Regis Paper Co. 4.40% 1st A	79.90	68.10	4.40	79¾
Scott Paper Co. $3.40 Cum.	59.06	66.09	3.40	92½
U. S. Gypsum Co. 7% Cum.	314.45	314.18	7.00	178¼
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	15.44	2.00	23¾
West Virginia Pulp & Paper 4½% Cum.	79.45c	77.54i	4.50	105½
COMMON STOCKS				
APW Products Co.	$0.73	$0.22	$0.25	2¾
American Writing Paper Corp.	(d)0.15	(d)0.15	0.25	5¾
Armstrong Cork Co.	7.54	n.a.	3.00	41⅜
Celotex Corp.	7.21e	4.06i	1.00	15½
Certain-Teed Prods. Corp.	4.02	3.57	1.00	10⅜
Champion Paper & Fibre	5.34j	8.70f	2.00	20⅛
Congoleum Nairn Co.	5.78	n.a.	2.25	25⅞
Container Corp. of America	10.12	9.98	4.50	30⅞
Crown Zellerbach	6.70(c)	7.26g	2.00	23⅜
Dixie Cup Co.	6.70	8.11	1.00	25⅛
Eastern Corp.	4.76	3.10	(h)	8¾
Flintkote Co.	5.86	5.13	2.50	24¼
Robert Gair Co., Inc.	2.67	2.48	1.70	5⅛
Great Northern Paper Co.	4.63	5.12	2.80	34¼
International Paper Co.	16.73	16.87	5.00	46⅞
Johns-Manville Corp.	5.22	5.42	2.00	35⅞
Kimberly Clark Corp.	5.02	4.83	1.65	18½
MacAndrews & Forbes Co.	3.68	3.70	2.50	33¼
Marathon Corp.	4.11c	3.76i	1.40	18
Mead Corp.	6.36	6.10	2.00	13¾
National Container Corp.	2.28	1.80	0.40	5⅜
Paraffine Cos. Inc.	2.45	2.49	1.20	15¾
Rayonier, Inc.	9.09	8.64	2.00	23¾
Ruberoid Co.	11.80	9.87	3.25	48⅞
St. Regis Paper Co.	2.71	2.27	0.80	6⅜
Scott Paper Co.	4.15	4.68	2.50	56⅛
Sutherland Paper Co.	6.02	5.24	2.50	34¼
Union Bag & Paper Corp.	9.17	8.21	3.50	22⅝
United Board & Carton	2.04b	(d)0.35i	(e)	4¾
U. S. Gypsum Co.	15.04	15.03	6.00	95½
United Wallpaper	(d)0.10	0.42	(n)	2⅞
West Virginia Pulp & Paper	11.33c	10.93i	4.00	37¼

(b) Year ended 11/23/48
(c) Year ended 10/30/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 1/31/49
(h) Directors took no action on August dividend—last payment 5/2/49
(i) 12 months to approximately 4/30/49
(j) 8 months to 12/31/48
(n) Last payment 25c, 9/16/47
n.a. Not available

(*) Earnings per combined preferred shares.

Canadian Securities Prices

OTTAWA — Security prices of common stocks in the pulp and paper classification, the Prices Branch, Canadian Government, reports, dropped from 234.2 in April to 227.4 in May for a loss of 6.8, on the base of 1935-39 being equal to 100, with among principal price changes during this period being increases for Hinde & Dauch and decreases for St. Lawrence Corp., Dryden Paper Co., and Great Lakes Paper Co.

Dividends Declared

Canadian Wallpaper Mfr's., Ltd., has declared a dividend of $1 on its Class A and $1 on its Class B shares, payable July 22 to holders of record July 8.

British Columbia Pulp & Paper Co., Ltd., has declared a dividend of $1.75 on its preferred stock, payable August 1 to holders of record July 15.

Greater Service to Fork-Truck Users

Greater Opportunities for Men Who Sell Them—

Clark Dealer Plan Achieves **Both**

WITH sales of its fork-lift trucks and industrial towing tractors exceeding all expectations, and with its position of production and engineering leadership firmly rooted in rich, productive soil, Clark Equipment Company, in its 30th year as a builder of materials-handling machines, has found it desirable to establish a nation-wide organization of independent franchised dealers as exclusive distributors of the products of its Industrial Truck Division.

THIS is indeed a far cry from 1939 when the entire output of the Industrial Truck Division was sold with ease by a handful of men!

TODAY'S volume is twenty times that of 1939; and the Company's stature—financial and engineering—is more than twenty times as great as in 1939. A considerable number of the '39 machines are in daily service, and many older machines are in regular operation after 20 and 25 years. The conviction is natural that 30 years hence many '49 machines will still be "on the job" alongside the new output of 1979. There will be no "orphans" bearing the name "Clark."

TO KEEP PACE with increasing demands, and to deliver the broad and competent service which Industry expects from Clark, the Company has chosen this plan of selling through independent dealers as a sound and logical evolution. Until the middle of 1948, approximately one-third of Clark's Industrial Truck Division representatives were on an independent dealer basis. It is expected that by the end of 1949 the nation-wide dealer organization will be complete.

HEADING up the dealerships or actively participating in them are key men of Clark's erstwhile factory-branch sales offices—factory-trained men, tested and proved as capable materials-handling counselors. These men share with Clark management the conviction that they can deliver, under the new plan, a broader and more valuable service to their customers and to all users of mechanized materials-handling; that they face broader, deeper vistas of opportunities which ambitious men so earnestly desire—opportunities for independence, for building greater earnings by their own efforts, for achieving prestige and leadership in their communities.

ANOTHER influence which furthered the plan is the fact that Clark management historically has been engineers and manufacturers. By decentralizing marketing activities, Clark can intensify its emphasis on development of better materials-handling machines and methods—to the end that Clark products shall achieve even higher excellence at lower cost, shall become still more valuable to industrial users and to the dealers who serve them.

THROUGH your Clark dealer, all the advantages of Clark engineering, integrated production and matchless experience are quickly available to you. He is fully qualified to make an unbiased appraisal of your materials-handling operations, and to recommend the type of machine that will serve you most efficiently at lowest cost. It's "good business" to CONSULT CLARK.

CLARK EQUIPMENT COMPANY

INDUSTRIAL TRUCK DIVISION

BATTLE CREEK 58, MICHIGAN

OTHER PLANTS—BUCHANAN • JACKSON • BERRIEN SPRINGS, MICHIGAN

REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD

AUTHORIZED CLARK DEALERS

ALABAMA: BIRMINGHAM
*M-H EQUIPMENT COMPANY
845 LOMB AVENUE

ARIZONA: PHOENIX
ROBERT H. BRAUN COMPANY
743 GRAND AVENUE

ARKANSAS: LITTLE ROCK
FRED J. VANDEMARK COMPANY
209 EAST MARKAM STREET

CALIFORNIA: FRESNO 1
ROBERT H. BRAUN COMPANY
505 MASON BUILDING

LOS ANGELES 23
*ROBERT H. BRAUN COMPANY
3008 EAST OLYMPIC BLVD.

OAKLAND 3
*GLEN L. CODMAN COMPANY
10521 PEARMAIN STREET

STOCKTON
GLEN L. CODMAN COMPANY
409 BELDING BUILDING

COLORADO: DENVER 2
J. N. MEADE
420 U. S. NATIONAL BANK
Service: FORK LIFT TRUCK SERVICE
2855 WEST 8TH AVENUE

CONNECTICUT: NEW HAVEN
*C. E. REUTTER CORPORATION
66 AMITY ROAD

FLORIDA: TAMPA
CLARK EQUIPMENT COMPANY
1145 ELLAMAE STREET

GEORGIA: ATLANTA
M-H EQUIPMENT CO.
(CONTACT BIRMINGHAM)

ILLINOIS: CHICAGO 4
MODERN HANDLING EQUIP., INC.
310 SOUTH MICHIGAN AVENUE
(*Service: Cook County*)
LIFT TRUCK SERVICE COMPANY
6919 SOUTH HALSTED STREET

INDIANA: INDIANAPOLIS 5
*W. A. MARSCHKE & SONS
1121 E. 46TH STREET

SOUTH BEND 14
*MATERIALS HANDLING EQUIP. CO. OF SOUTH BEND, IND.
2625 SOUTH MICHIGAN STREET

IOWA: DAVENPORT
BIG RIVER EQUIPMENT CO.
1344 WEST THIRD STREET
Service: DAVENPORT ALL-WHEEL-DRIVE CO.
1344 WEST THIRD STREET

DES MOINES
*BIG RIVER EQUIPMENT CO.
914 GRAND AVENUE, ROOM 255

KANSAS: KANSAS CITY
Sales and Service:
(SEE KANSAS CITY, MISSOURI)

WICHITA
Service: GENERAL ENGINE & EQUIPMENT CO
218-220 SOUTH WICHITA

LOUISIANA: NEW ORLEANS
T. G. FRAZEE
910 CARONDELET BLDG.

MAINE: PORTLAND
BRODIE INDUSTRIAL TRUCKS, INC.
465 CONGRESS STREET

MARYLAND: BALTIMORE
*FALLSWAY SPRING & EQUIPMENT CO.
CORNER FALLSWAY & LEXINGTON

MASSACHUSETTS: BOSTON (MALDEN 48)
*BRODIE INDUSTRIAL TRUCKS, INC.
50 COMMERCIAL STREET, MALDEN 48

MICHIGAN: BATTLE CREEK
*CLARK EQUIPMENT COMPANY
INDUSTRIAL TRUCK DIV. PLANT

DETROIT 2
CLARK EQUIPMENT COMPANY
6520 CASS AVENUE
Service: INDUSTRIAL TRUCK SERVICE, INC.
8815 HARPER AVENUE

MINNESOTA: MINNEAPOLIS 2
MATERIAL HANDLING ENGINEERS
225 SOUTH 5TH STREET, ROOM 201
Service: SMITH-DUNN COMPANY, INC.
2301 UNIVERSITY AVENUE, S. E.

MISSOURI: KANSAS CITY 6
CLARK EQUIPMENT COMPANY
1009 BALTIMORE AVENUE
Service: LIFT TRUCK SERVICE & SUPPLY
NORTHWEST 15TH AND McGEE STREETS

ST. LOUIS 8
MATERIALS HANDLING EQUIPMENT CORP.
3820 WASHINGTON BLVD.
Service: FORK LIFT TRUCK SERVICE CO.
511 NORTH CHANNING AVENUE

AUTHORIZED CLARK DEALERS

NEW JERSEY: JERSEY CITY
JERSEY INDUSTRIAL TRUCKS, INC.
34 EXCHANGE PLACE
Service: BOND INDUSTRIAL MAINTENANCE CO.
51 CLARKSON STREET AT GREENWICH, N. Y. 14

NEW YORK: BUFFALO
*BRODIE INDUSTRIAL TRUCKS INC.
1450 MICHIGAN AVENUE

NEW YORK 6
*BOND INDUSTRIAL EQUIPMENT CO.
165 BROADWAY, ROOM 2200 (OFFICE)
Service and Display Room:
51 CLARKSON STREET AT GREENWICH, N. Y. 14
also 289 BOND STREET, BROOKLYN 31

SYRACUSE
BRODIE INDUSTRIAL TRUCKS INC.
712 STATE TOWER BLDG.

ALBANY (WATERVLIET)
*INDUSTRIAL TRUCK SALES, INC.
BROADWAY AT 25TH, WATERVLIET

NORTH CAROLINA: CHARLOTTE
CLARK EQUIPMENT CO.
416 KESWICK AVE.

GREENSBORO
Service Outlet only:
INDUSTRIAL TRUCK SERVICE CORP.
629 SOUTH SPRING STREET

OHIO: CINCINNATI 9
*ROBERT C. YOUNG & CO.
4453 34TH AVENUE

CLEVELAND
CLARK EQUIPMENT COMPANY
522 ROCKEFELLER BLDG.

TOLEDO 10
P. L. REYNOLDS, 2558 FULTON STREET
Service: WILLIS DAY STORAGE CO.
801 WASHINGTON STREET

OKLAHOMA: TULSA
ARST EQUIPMENT COMPANY
34 NORTH MADISON

OREGON: EUGENE
PRESTON FALLER COMPANY
891 TAYLOR STREET

PORTLAND 5
PRESTON FALLER COMPANY
1220 S. W. MORRISON STREET

PENNSYLVANIA: HARRISBURG
BRODIE INDUSTRIAL TRUCKS, INC.
3229 MEADOW LANE

PHILADELPHIA 22
BRODIE INDUSTRIAL TRUCKS, INC.
1605-23 NORTH FRONT STREET
Service:
PHILADELPHIA ENGINE REBUILDERS, INC.
330 WEST QUEENS LANE

PITTSBURGH
*MATERIAL HANDLING INCORPORATED
319 THIRD AVENUE

SOUTH CAROLINA: COLUMBIA
M-H EQUIPMENT CO.
(CONTACT BIRMINGHAM)

SOUTH DAKOTA: SIOUX FALLS
CENTURY EQUIPMENT & SUPPLY CO.
22 WEST 7TH STREET

TENNESSEE: MEMPHIS 3
*FRED J. VANDEMARK COMPANY
1110 UNION AVENUE

TEXAS: DALLAS
T. G. FRAZEE
1012 FIRST NATIONAL BANK BLDG.
Service: TRUCK EQUIPMENT COMPANY
2409 COMMERCE STREET

HOUSTON
*T. G. FRAZEE, 810 PETROLEUM BLDG.

UTAH: SALT LAKE CITY
ALBERT J. ISAACSEN CO.
45 SOUTH 3RD WEST STREET.

VIRGINIA: NORFOLK
*McLEAN-SHAND, INC.
955 WEST 21ST STREET

WASHINGTON: SEATTLE 1
*PRESTON FALLER COMPANY
1921 MINOR AVENUE

SPOKANE 9
PRESTON FALLER COMPANY
EAST 41 GRAY AVENUE

WISCONSIN: MILWAUKEE 2
CLARK EQUIPMENT COMPANY
759 NORTH MILWAUKEE AVENUE, ROOM 623
Service: LIFT TRUCK SERVICE CO.
5710 WEST NATIONAL AVE., WEST ALLIS, WIS.

DISTRICT OF COLUMBIA: WASHINGTON
CLARK EQUIPMENT COMPANY
927 15TH STREET N. W.

TERRITORY OF HAWAII: HONOLULU
*PRESSED STEEL CAR COMPANY
538 REED LANE, P. O. BOX 300

*Sales and Service Combined.

IMPORTS — EXPORTS

IMPORTS AT NEW YORK

Week Ending July 9

Newsprint

Montmorency Paper Co., Brigus, Botwood, 1842 rolls, 1361 rolls (Alexandria, Va.).

Madden Reeve Angel & Co., Inc., Gripsholm, Gothenburg, 372 rolls.

Madden Reeve Angel & Co., Inc., Sparreholm, Malmo/Finland, 1208 rolls.

N. Y. Jornal American, Markland, Liverpool, N. S., 573 rolls.

N. Y. Herald Tribune, Markland, Liverpool, N. S., 1673 rolls.

N. Y. World Telegram, Markland, Liverpool, N. S., 674 rolls.

Brooklyn Eagle, Markland, Liverpool, N. S., 627 rolls.

Brooklyn Eagle Press Inc., Markland, Liverpool, N. S., 58 rolls.

Herald Statesman Inc., Markland, Liverpool, N. S., 84 rolls.

Advance Pattern Co., Markland, Liverpool, N. S., 1 roll.

Richmond Newspapers, (Richmond, Va.), Markland, Liverpool, N. S., 1534 rolls.

Tissue Paper

B. F. Drakenfeld & Co., American Miller, London, 28 casks (Gauze carbonizing).

Drawing Paper

H. Reeve Angel & Co. Inc., American Miller, London, 3 cs.

H. Reeve Angel & Co. Inc., American Producer, London, 3 cs.

Filter Paper

H. Reeve Angel & Co. Inc., American Miller, London, 11 cs.

H. Reeve Angel & Co. Inc., American Producer, London, 13 cs.

Printing Paper

S. H. Pomerance & Co., American Miller, London, 3 cs.

Paper Serviettes

(———), Mauretania, Southampton, 12 crates.

Gummed Paper

B. F. Drakenfeld & Co., Parthia, Liverpool, 34 cs., 5 drums.

Parchment

(———), Mauretania, Southampton, 1 cs.

Gerhard & Hey, Queen Mary, Southampton, 1 cs.

Andrews Paper Co., Queen Mary, Southampton, 1 cs.

Paperhangings

C. A. Haynes & Co., American Miller, London, 6 cs., 3 bls.

Wrapping Paper

Baluvelt Wiley Paper Manfg Co., Sparreholm, Malmo/Finland, 105 rolls.

Jay Madden Corp., Sparreholm, Malmo/Finland, 184 rolls.

Paper Napkins

H. W. Robinson & Co., American Producer, London, 2 cs.

Paper Towels

H. W. Robinson & Co., American Producer, London, 1 cs.

M. Wertheim, Parthia, Liverpool, 1 ble.

Writing Paper

H. W. Robinson & Co., American Producer, London, 5 cs.

Tracing Cloth

E. Dietzgen & Co., Parthia, Liverpool, 11 cs. (bleached cotton).

Miscellaneous Paper

Saentis Inc., Leerdam, Antwerp, 1 cs.

Rags, Baggings, Etc.

A. de Vries Trading Corp., Ronda, Rouen, 98 bls, scrapbagging, 49 bls. cotton rags.

National City Bank, Mahenge, Genoa, 192 bls. paperstock.

Royal Manufacturing Co., Leerdam, Antwerp, 50 bls. cotton waste.

Loumar Textile By Products Inc., Executor, Venice, 5 bls. rags.

State Street Trust Co., Executor, Venice, 114 bls. old jute bagging.

National City Bank, Executor, Genoa, 67 bls. old waste bagging.

E. J. Keller Co. Inc., Excambion, Alexandria, 50 bls. white cotton rags.

National City Bank, Excambion, Alexandria, 76 bls. bagging.

Midwest Waste Material Co., Excambion, Genoa, 55 bls. bagging.

Guaranty Trust Co., Gripsholm, Gothenburg, 58 bls. old bagging.

Harris Goldman Co., American Producer, London, 45 bls. bagging.

Chemical Bank Trust Co., Algonquin, Rotterdam, 124 bls. rags & bagging.

J. H. Schoeder Banking Corp., Navieria, Antwerp, 224 bls. cotton waste.

Chase National Bank, Parthia, Liverpool, 109 bls. hosiery clips.

American Express Co., Parthia, Liverpool, 22 bls. wool rangs, 69 bls. wool thread waste.

National Bank of Detroit, Vibeke Maersk, Antwerp, 51 bls, scrap bagging.

National City Bank, Vibeke Maersk, Rotterdam, 96 bls. bagging.

(———), Alabaman, Dunkirk, 52 bls. bagging.

1st National Bank of Boston, Hellenic Sky, Piraeus, 150 bls. rags.

Old Rope

(———), Maidan, Calcutta, 80 bls. rope cuttings, 80 bls. old hemp rope cuttings.

Gluestock, Etc.

Karr Ellis Co., Parthia, Liverpool, 295 bags gluestock, 246 bls. hidecuttings.

Woodpulp

Cellulose Sales Corp., Gripsholm, Gothenburg, 1 cs. (samples).

Perkins Goodwin & Co., Gripsholm, Gothenburg, 1 cs. (samples).

Elof Hansson Inc., Gripsholm, Gothenburg, 1 pcl. (samples).

E. I. Du Pont de Nemours & Co., Gripsholm, Gothenburg, 1 cs. (samples).

Woodpulp Boards

Jay Madden Corp., Sparreholm, Malmo/Finland, 25 bls. (solid white).

IMPORTS AT BOSTON

Week Ending July 9

1st National Bank of Boston, Leerdam, Antwerp, 38 bls. hosiery clips.

IMPORTS AT PHILADELPHIA

Week Ending July 9

W. J. Jones, American Miller, London, 1 cs. glazed paper.

E. J. Keller Co. Inc., Maidan, Calcutta, 70 bls. white cotton rags.

Perkins Goodwin & Co., Sparreholm, Malmo/Finland, 500 rolls newsprint.

Madden Reeve Angel & Co. Inc. Sparreholm, Malmo/Finland, 629 rolls newsprint.

Pulp Sales Corp., Sparreholm, Malmo/Finland, 1315 bls. prime unbleaced kraft sulphate pulp, 1524 bls. white dry mechanically ground woodpulp, 5917 bls. prime extra strong bleached sulphite pulp, 262 bls. prime extra strong unbleached sulphite pulp.

(———), Excambion, Venice, 94 bls. old jute rags.

F. Weber & Co., Excambion, Genoa, 12 cs. drawing paper.

IMPORTS AT BALTIMORE

Week Ending July 9

Perkins Goodwin & Co., Sparreholm, Malmo/Finland, 1250 bls. dry sulphate pulp.

Bulkley Dunton Paper Co., Sparreholm, Malmo/Finland, 1016 bls. dry sulphite pulp.

IMPORTS AT NORFOLK

Week Ending July 9

Chase National Bank, Hellenic Sky, Genoa, 121 bls. old waste bagging.

E. J. Keller Co. Inc., Algonquin, Antwerp, 126 bls. jute waste.

W. Steck & Co., Algonquin, Antwerp, 126 bls. bagging.

Canadian Exports During May

OTTAWA—Exports of newsprint paper from Canada advanced to $38,624,000 during May this year as compared with $33,830,000 during the same month a year ago and reached a cumulative total of $165,044,000 in the first five months of 1949 ending May as against $147,643,000 in the corresponding period last year, the Canadian Government reports.

However, exports of other paper from Canada slumped down to only $2,037,000 during May compared with $3,772,000 in the similar month a year ago and amounted to only $8,881,000 during the first five months of the present year as against $14,133,000 in the same period last year. In addition, Canadian exports of books and printed matter declined to $161,000 during May, 1949, compared with $500,000 a year ago in the same month and totaled only $1,296,000 in the January-to-May period against $1,959,000 in the similar period last year.

Likewise, exports from this country of woodpulp fell down to $14,812,000 during May this year as compared with $19,773,000 in May of last year and slumped down to a cumulative total of merely $73,969,000 in the first five months of the year as against $86,727,000 in the corresponding period last year.

Europe, Africa, Asbestos Markets

OTTAWA—France expects to receive 15,000 tons of Canadian asbestos during 1948-49, states a report from Paris to Foreign Trade Service of the Canadian Government, adding that Russia and South Africa are returning to the market with 5,000 and 12,500 tons respectively. In addition, deposits of lower-grade qualities are now being actively developed in Corsica, with estimated deliveries for this and next year being about 6,000 and 12,000 tons respectively.

Canadian Exports to Peru

OTTAWA—It is reported the value of Canadian exports to Ecuador during 1948 totaled $1,307,615 as compared with $1,626,428 in 1947. C. J. Tighem, Canadian Government Trade Commissioner in Lima, Peru, states that newsprint was amongst the principal products shipped from Canada.

LABOR

Rucker Plan Hits Snag

RIDGEFIELD PARK, N.J.—The plan for industrial peace inaugurated two years ago has ended on the picket lines around the plant of the Continental Paper Co., here, where some 400 workers employed by the firm have struck on the specific issue of the firing of an employe with 23 years' service. Back of the strike is the failure of the Share of Production Plan drafted by Allen W. Rucker, president of the Tool Owners Union.

The strikers are members of CIO's United Paper Workers. Their contract expired June 1 and since that time attempts have been made to agree on a new one. No problem of wages was at issue in the discussions, according to a union spokesman, but the problems of upgrading and number of men on a job proved a stumbling block.

Two years ago all was harmonious as the company, together with Mr. Rucker and some of his associates, joined with union officials in announcing the new contract just signed. Anthony Adamo, paperworkers regional director, expressed delight with the terms concluded.

Under the plan, a certain percentage of sales was set aside as pay for the workers. At the end of each period of reckoning, all of this percentage that hadn't been paid out as wages at an agreed base rate was divided into three parts. One part went into a pension fund, another went into a reserve fund and a third part was paid to the workers as extra compensation for their production. The reserve fund was drawn on when no other money came in.

"The plan worked OK for the first 12 or 14 months", said a union spokesman, "and then with falling prices it began to fall apart." The day the strike started the six-month special pay was given to the workers. It totaled about $1.60 each with some getting as little as 73 cents, said the union.

Under the contract there was arbitration machinery for union-challenged dismissals and the refusal of the company to use this in the case of the dismissed worker brought on the strike, the union asserts.

In 1947, when the Tool Owners Union appealed to the New York Board of Standards and Appeals for permission to incorporate, the word "union" in its title the action was challenged by both CIO and AFL.

After a lengthy hearing, the board refused permission. On appeal the State Supreme Court upheld the decision and added that "use of the word union in (their) title is misleading . . . and contrary to public policy"

In operation, some union members complained that the Rucker plan tended to make each workers a policeman speeding up his fellow worker. Now, with no extra pay coming in, the workers were less inclined to agree to reduction in personnel in each department.

Meanwhile New Jersey Mediation Board officials are trying to settle the strike. The union has expressed willingness to have ther help in the matter.

Wage-Hour Regulations

NEW YORK—In a letter to the membership of the American Paper & Pulp Ass'n., dated July 8, E. W. Tinker, executive secretary, said in part:

"A representative of the Wage and Hour Administrator has confirmed reports that during the next month proposed amendments to the Wage and Hour Regulations defining the terms 'Executive, Administrative and Professional Employes' will be published in the Federal Register.

"In October, 1947, notice of hearing on proposed amendments was published. Subsequently the American Paper & Pulp Ass'n. filed a statement with the Wage and Hour Administrator urging that salary tests for Executive, Administrative and Professional Employes be deleted in their entirety, and in addition suggested that other proposals made at that time be rejected. Thereafter, the Administrator withheld the issuance of any revision of regulations, pending possible action by the 80th Congress.

"The Association will keep the industry informed of developments. However, should you wish to register your opposition to any proposed change in the present regulations, the practical method for doing so would be to communicate immediately with your Congressman rather than with the Office of the Wage and Hour Administrator."

Lock Haven Strike Settled Amicably

LOCK HAVEN, Pa. — The month-old strike at the mill of the New York & Pennsylvania Co., Inc., has been settled amicably and the mill has resumed production. No wage increase was granted.

No Time Lost in Disputes

OTTAWA—No time was lost in labor disputes in the pulp and paper products manufacturing industries during May, 1949, the Canadian Government states.

TRAFFIC

All-Water Haul, Finland to St. Louis

ST. LOUIS — The first shipment of newsprint to arrive in this part from a foreign port by all-water transportation was unloaded from barges July 6 at the Mississippi Valley Barge Line Co. dock at the foot of Rutger street. Some of the newsprint, obtained in Finland, was used in that edition of the *Post-Dispatch*.

The 500-ton shipment left Finland by freighter in mid-April and arrived June 1 at New Orleans where it was transferred to barges for the trip up the Mississippi. The barges arrived here on July 2.

Foreign purchases of newsprint are being made by the *Post-Dispatch* to supplement its normal supply from Canadian sources. Two additional shipments of 500 tons each from Finland are scheduled to arrive by barge in St. Louis later this summer.

Reed Bill, S-257 Signed

The President recently signed Reed bill, S. 257 amending the Interstate Commerce Act. The purpose relates to the two-year limit for recovery of undercharges and overcharges on

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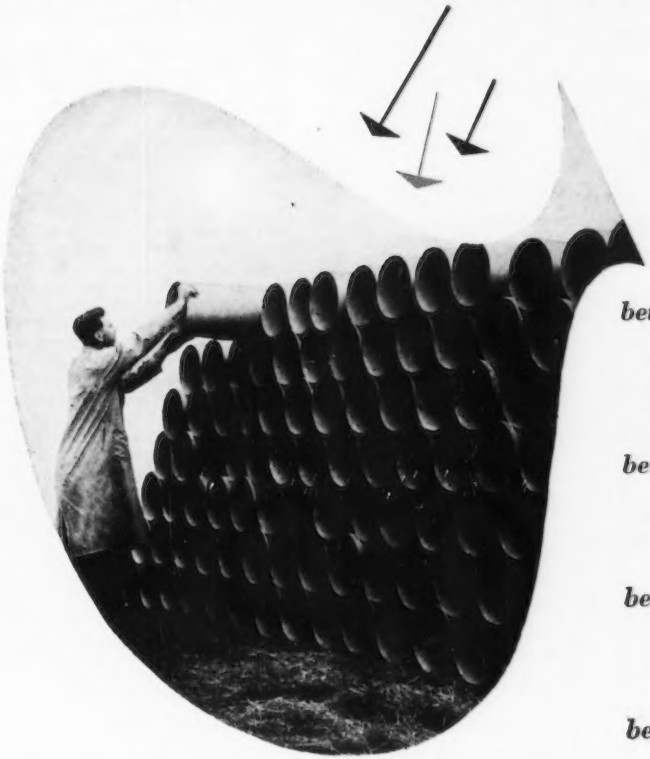

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TRENT STAINLESS STEEL TUBING

freight shipments. Formerly only the common carriers subject to Part I of the IC Act were required to follow the dictates of the law concerning freight charges within a two-year period. The rail carriers are subject to Part I. On claims for over-charges, firms had to meet conditions of the Act.

On approval by the President, the amendment covers Motor Carriers, Water Carriers and freight forwarders, and they are now required to meet the same time conditions as formerly applied to rail carriers alone. The Motor Carriers are subject to Part II of the Act; Water carriers to Part III; Freight Forwarders to Part IV. The intention of the amendment is to bring uniformity. Perhaps it will in that carriers other than rail were not governed by a period of limitation under the Act. The States prescribed various periods for these carriers.

The Bill's requirement to make the period of two years limit to apply nationally is to remove the present confusion now existing among the states.

Canadian Carloadings

OTTAWA—Car loadings on the Canadian railways of woodpulp and paper declined to 3,605 cars in the week ended June 25 this year compared with 3,649 cars in the preceding week or 3,924 cars in the same week last year, with the Eastern Division accounting for 3,169 cars in the week ended June 25 as against 3,169 cars in previous week or 3,358 cars a year ago in same period, and the Western Division accounting for 436 cars, 480 cars and 566 cars in these respective weeks.

Such car loadings from the beginning of this year until the week ending June 25 declined to a cumulative total of 102,019 cars as compared with 109,419 cars in the similar period of last year, with the Eastern Division showing a decrease to 69,114 cars as against 95,628 cars in the same period a year ago and the Western Division dropping to a total of 12,905 cars compared with 13,791 cars of woodpulp and paper in thec orresponding period last year.

Close Freight Stations Saturdays

All freight stations in Illnois will be closed on Saturdays if the Illinois Commerce Commission grants the petition of the rail carriers. Hearings will be held in Springfield, Ill., on July 19 and in Chicago on July 26. The rail application (requested to be effective September 1) is based on the 40-hour week for non-operating employes which becomes effective on September 1. Among the million in the group, 250,000 clerks are considered freight station employes.

What is an "Exception"?

One of the principles governing classification of lading is that any given article is related in value, bulk, space, weight to others with similar characteristics, and if the cost to handle is near the same level, all the items are generally rated the same.

For what use an article is intended after delivery or destination point should not have any direct influence on the rating. The carrier does not have the legal right to apply different rates on the same article; there can only be one rate that will apply.

The purpose to which the customer intends to put the item can't be used by the carrier to apply different rates. There are, however, legal restrictions. The shipment can't be intentionally wrongly described in order to secure lower rates. If waste paper is intended for scrap use, in order to secure the lowest rate the intention should be stated on the bill of lading. If the waste paper is intended for conversion into new paper and shipped "for scrap use" the carrier will have the right to collect "balance due" on the basis of a higher rate, as the lading is properly raw material for paper stock.

A "change of mind" or the "decision after delivery" to use the low rated scrap paper for another purpose isn't a "sin" provided the consignee advises the carrier and pays the difference in the freight charges. It is, in fact, dangerous to neglect informing the carrier, for the reason the no firm can possibly know when their freight shipments are checked by the ICC. The latter's Bureau of Inquiry constantly sues for lading shipped on the basis of fraud. Because many of those sued are reliable firms, the so-called frauds obviously were not intentional. The oversight or the neglect were the fault of someone failing to understand the importance of keeping the firm in the clear. This however, does not help matters, in that the ICC sues the firm and not the employe.

Tariffs have been published by carriers with descriptions of different articles similarities. Different rates were applied and upon investigation were declared ambiguous. They were based on the ultimate use of the commodity as the reason for the different rates.

The ICC has stated "In the interest of uniformity *one description* is sufficient, irrespective of the use to which they are put". (International Paper Co. vs. A.G.S.R.R. 172 ICC 120, also 121 Fed. Rep. 2d, 645). The commodities in these cases had related similarities and this is the governing principle in classification.

There is a condition existing at present that is badly out of tune with modern transportation. Articles are often subject to different ratings for the reason there are three principle territories; these are Official, Southern and Western. Each of these are divided into sub-territories. For example, Official consists of Central, Trunk Line and New England Territories. Each of these have Exception tariffs to the Official Classification. Regardless of the rating in the Classification, the Exception takes precedence (rules, ratings, weights) unless there is a specific provision otherwise. Not all articles have an Exception that removes the application in the Classification. The Exception only applies in the territory where the shipment is destined (unless the tariff states otherwise).

This does not permit one to relax, assured he has a rate that will apply anywhere. Dependent upon where shipment is headed, it is subject to one of the following: The territory may have a commodity rate and the tariff will so state "Paper and related products or paper articles". In the same tariff there may be a rule which states one may alternate with a class rate if the later is lower. Or the rate may be specific and apply regardless if it is higher than a class rate found in another tariff. This makes a confusing condition and muddled affair to the inexperienced and even the experienced become weary with the needless task of wading through numerous tariffs to be certain one has the correct rate.

The condition shows some improvement over the early days when each railroad had its own Classification. Today's tariff is the result of 50 years work. Wisely, the Motor Carriers, when they were placed under regulation of the IC Act, adopted a Classification copied from the rail. This made it easier for all concerned, both carriers and shippers.

There is some improvement in the purpose and intention of the new proposed Uniform Classification. One rate to apply on a national scale unless changed by the carrier's Exception tariff. The "purpose-intention" however needs adjustment. A new rating is of no value to the shipper if it increases the freight charges above what he now pays. At present, he is paying high rates, plus several increases, plus a transportation tax that the government does not need nor deserve. The idea in the new proposed Uniform Classification which is to be published in the distant future is to equalize rate application. But the chief complaints of the shippers in docket hearings are that the ratings proposed are the highest of those shown and what should be the basis is an average rating?

Many times there have been questions raised as to the need of a Classification tariff when the Exceptions so completely remove any trace of the ratings found in the first tariff. In some cases the questions are proper, while in others without the Exceptions the shipper would face exceedingly high rates.

A good example is in Wrapping Paper Wrappers. The Classification separates without explanation and lists different ratings on items that are apparently the same in transportation. Vegetable Parchment Paper, printed less-than carload, have ratings of 85

percent in the East and West with 55 percent in the South. The item, not printed, 70 percent in the East and West, with 55 percent in the South. The item shipped in carloads, printed or not printed, weight 36,000 pounds minimum, rating 35 percent in the East, 40 percent in the South, 45 percent in the West.

Paper Wrappers, noibn (not otherwise indexed by name and not more specifically provided for in the Classification), ratings are LCL 70 percent in the East, with 55 percent in the South and West; CL as above except in the West 37½ percent.

Wrappers, Vegetable Parchment Paper, LCL 85 percent in the South, East, and West; CL 35 percent in the East and 45 percent in the South and West.

Corrugated Wrapping Paper, 70 percent in the East and West, 55 percent in the South; CL, weight 24,000 pounds (subject to Rule 34), 35 percent in the East, 30 percent in the South, 37½ percent in the West.

Wrapping Paper, noibn, other than oiled or waxed, LCL 70 percent in the East, 45 percent in the South, 55 percent in the West.

Oiled or waxed same as above, except in the South, 55 percent. CL, same ratings as corrugated with minimum weight of 36,000 pounds.

These paper items with many more are listed paper and paper articles in the Exceptions of both Official and Southern Territories. The ratings are far below those of the Classification such as LCL 55 percent and CL with the average rating 6th Class in Official Territory (27½ percent).

The sixth class rate in the South is 40 percent of the first class ratee, so in this case the rating is Class 27½ (27½ percent).

An Exception to the Classification, according to the ICC, can't be considered as providing specific commodity rates. (Fort Wayne Corrugated Paper Co., vs. Director General 66ICC 669.) Nor has the ICC advocated that, when Exceptions to the Classification are established in one or more territories to meet motor carrier competition (the exception ratings are for that purpose) or other conditions that warrant departure from normal Classification ratings, like exception should be established in other territories where similar conditions do not exist. (Paper, in Official Territory 248 ICC 135, 140).

In 232 ICC 593, the Commission said—"The sound rule is that when an article is clearly embraced in a general description in an Exception, the rate provided in that Exception is applicable, although there may be a more specific description in the Classification. The true function of an Exception is to remove articles from the Classification and establish Class Rates thereon different from the normal class rates. The commodity descriptions in the Exceptions are of necessity frequently broader and more general than

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Specially Designed for the Paper Industry

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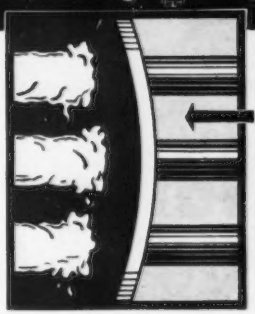
Available in models for either manual, electric motor or hydraulic piston drive. Automatic types operate on adjustable predetermined time schedules.



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in the Classification, especially when the Exception covers a number of articles of the same general character which are separately rated in the Classification. Were the rule otherwise, it would be necessary to reproduce the exact wording of the Classification or make the description of every article intended to be covered by the Exception clearer than the description in the Classification and probably more lengthy.

AWARDS

Army Awards Made

N. Y. QM Purchasing Office

QM-30-280-49-1327 covering Miscellaneous Paper Items, to:

Walker, Goulard Plehn Co., Inc., 450 Pearl St., N.Y.C.—50 reams (Cover, Paper, Blue) @ $14.44 per ream. 1,569 reams (Paper, Book, Offset) from: $4.134 to $4.694.

Frank Parsons Paper Co., Inc., 16th & Okie Sts., NE Washington, D. C.—50,000 sheets (Paper, Cover, Goldenrod, 20 x 26") @ $.0387 each.

Pulp & Paper Trading Co., 21 E. 40th St., N.Y.C.—574 reams (Paper, Ledger, Sulphite) @ $7.43 per ream. 934 reams (same as above—white) @ $5.21. 2,410 reams (Paper, Book, Offset, White) @ $7.64.

Marquette Paper Corp., 700 W. Lake St., Chicago, Ill.—4,550 reams (Paper, Book, Offset) @ $2.76. (22½ x 25½) @ $3.818. 4,731 reams (as above—22½ x 35) @ $3.818. 2,810 reams (as above—35 x 45) @ $7.636.

This procurement is for the U. S. Air Force.

QM-30-280-49-1328 covering Miscellaneous Paper Items, to:

Garrett Buchanan Co., 18 So. 6th St., Phila., Pa.—24,000 sheets (Boards, Bristol) from: $.08053 to $.0891 per sheet.

Bermingham & Prosser Co., 10 E. 40th St., N.Y.C.—500 reams (Paper, masking orange, 28 x 30") @ $10.15 per ream.

Crocker, Burbank Papers, Inc., $45 Westminster St., Fitchburg, Mass.—1,000 reams (Paper, map, 17 x 22") @ $14.94 per ream.

Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul, Minn.—20,000 each (Paperboard, road sign white, 17 x 17, reflectorized) @ $.215 each.

Bee Paper Co., Inc., 1-9 Joralemon St., Bklyn., N. Y.—2,560 rolls (Paper, various types) from: $1.49 to $13.89 per roll. 1,300 dozen (Paper, various sizes) from: $.55 to $.62 per doz.

Filter Paper Co., 2426 So. Michigan Ave., Chicago, Ill.—2,000 pks. (Paper, lens tissue, 4 x 6") @ $.07.

Charles W. Speidel & Co., 112 No. 12th St., Phila., Pa.—2,500 rolls (Paper, Tracing, White) from: $1.60 to $4.40 per roll.

QM-30-280-49-1373 covering Paper, Book, Enamel, 2 sides coated, White, 25x38 and 35x45", to:

Bermingham & Prosser Co., 10 E. 40th St., N.Y.C.—2,680 reams (25x38") from: $8.73 to $9.186. 1,631 reams (35x45") from: $14.46 to $15.14.

Walker, Goulard Plehn Co., 450 Pearl St., N.Y.C.—2,678 reams (25x38") from: $9.64 to $9.98. 1,628 reams (35x45") from: $15.97 to $16.53.

This procurement is for the U. S. Army.

QM-30-280-49-1411 covering Item 1—Paper, Bond, White, 36 x 48", and Item 2—Cloth, tracing, white 36 x 48, to:

Frank W. Parsons Paper Co., 16th & Okie Sts., NE Wash., D. C.—74 reams @ $17.75.

Holliston Mills, Inc., 70 W. 40th St., N.Y.C.—32,500 sheets @ $1.14.

This procurement is for the U. S. Army. Directive quantity was: Item 1—26,000 sheets; Item 2—74 reams.

Navy Awards Made

N. Y. Navy Purchasing Office

Inv. No. 5997—covering Bags, Coffee, to Arkell Safety Bag Co., N.Y.C.—100,000 each at $.2995 each.

Inv. No. 5090—Paper, cover, double coated, white, to: Walker, Goulard Plehn Co., Inc., N.Y.C.—1,270,000 sheets @ $.05231 per sheet. (1%—10 days).

Inv. No. 5216—Paper, Book, Offset, to: Wilcox-Walter-Furlong Paper Co., Wash., D. C.—1,000,000 sheets @ $.0364. (½ of 1%—30 days).

OBITUARIES

Arthur Pink, 50, on the mechanical staff of the International Paper Co., passed away at his home in Ottawa, P.Q., on July 5. He is survived by one son, two brothers and a sister.

John D. Swigart, 74, owner of the Swigart Paper Co., Chicago, died on July 2 at his home in that city. He is survived by his mother, Mrs. Elizabeth Swigart.

Charles H. Morse III, vice-president of Fairbanks-Morse & Co., Chicago, died on July 9, when a plane in which he was riding crashed at Roanoke, Ill.

Willard Blake, 55, Hubbs & Howe Co. salesman, died at his home in Buffalo, N. Y., on June 30. Surviving him are his mother and a brother.

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AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
May 28	83.2	May 29	98.9
June 4	79.7	June 5	92.9
June 11	82.3	June 12	95.0
June 18	78.8	June 19	95.0
June 25 (Revised)	83.9	June 26	99.8
July 2	77.8	July 3	91.3

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.3	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	99.1	88.8	88.6	88.9	100.4	105.5	99.8	87.5
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
May 28	77	May 29	100
June 4	65	June 5	87
June 11	79	June 12	101
June 18	78	June 19	97
June 25	80	June 26	97
July 2	75	July 3	89

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78								

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Percents of operation based on "Inch-Hours" reported to the National Paperboard Association.

INDUSTRIAL PRODUCTION, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Board of Governors. 1935-39 average = 100]

Source: Federal Reserve Bulletin, June, 1949

Industry	1948 Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1949 Jan.	Feb.	Mar.	Apr.
Paper and Paper Products	*169*	*170*	*165*	*149*	*165*	*166*	*172*	*170*	*153*	*163*	*r158*	*151*	*146*
Paper and pulp	163	164	160	145	160	160	167	163	149	158	r154	147	141
Pulp	182	188	183	170	191	181	194	189	173	189	183	176	167
Groundwood pulp	107	112	107	104	107	103	109	110	107	105	100	102	97
Soda pulp	108	112	111	96	110	107	111	107	104	107	108	106	100
Sulphate pulp	293	309	301	283	328	301	330	317	285	327	309	291	274
Sulphite pulp	151	151	146	135	148	145	153	149	137	145	145	141	135
Paper	160	160	156	141	156	156	163	159	146	153	r150	143	137
Paper board	192	191	187	165	184	189	193	195	167	182	174	163	162
Fine paper[1]	87	86	86	74	83	83	...	...	...	...	...	...	...
Printing paper	166	169	168	150	160	161	172	165	160	157	r158	153	149
Tissue and absorbent paper	173	169	160	153	161	163	172	162	153	159	r163	160	155
Wrapping paper	151	150	145	135	153	148	157	150	142	151	r147	139	122
Newsprint	95	100	99	95	99	98	100	99	98	99	98	99	99
Paperboard containers (same as Paperboard)	...	...	...	...	...	...	...	...	...	...	...	...	...

p Preliminary. *r* Revised. [1] Series included in total and group indexes but not available for publication separately.

[2] This series is in process of revision.

Note.—For description and back figures see Bulletin for October, 1943, pp. 940-984, September, 1941, pp. 878-881 and 933-937, and August, 1940, pp. 753-771 and 825-882.

HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING INDUSTRIES

[Compiled by the Bureau of Labor Statistics]

Industry group	Average hours worked per week: 1948 Mar.	Apr.	Dec.	1949 Jan.	Feb.	Mar.	Apr.	Average hourly earnings (dollars per hour): 1948 Mar.	Apr.	Dec.	1949 Jan.	Feb.	Mar.	Apr.
All manufacturing	*40.4*	*40.1*	*40.0*	*39.5*	*r39.3*	*r39.0*	*38.3*	*1.289*	*1.292*	*1.376*	*1.380*	*1.377*	*r1.375*	*1.374*
Durable goods	*40.9*	*40.5*	*40.7*	*40.2*	*r39.9*	*r39.4*	*39.0*	*1.352*	*1.357*	*1.456*	*1.460*	*1.458*	*r1.456*	*1.455*
Nondurable goods	*39.9*	*39.6*	*39.3*	*38.7*	*r38.7*	*r38.6*	*37.6*	*1.220*	*1.220*	*1.287*	*1.293*	*1.289*	*r1.288*	*1.287*
Paper and allied products	43.1	42.7	42.6	41.5	41.4	r41.1	40.4	1.249	1.250	1.330	1.336	r1.335	r1.331	1.326

r Revised.

Note.—Figures for April, 1949, are preliminary. Back figures are available from the Bureau of Labor Statistics.

FACTORY EMPLOYMENT AND PAY ROLLS, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Bureau of Labor Statistics, 1939 = 100]

Industry group or industry	Factory employment: 1948 Mar.	Apr.	Dec.	1949 Jan.	Feb.	Mar.	Apr.	Factory pay rolls: 1948 Feb.	Mar.	Apr.	Dec.	1949 Jan.	Feb.	Mar.
Paper and Allied Products	*148.0*	*146.8*	*151.1*	*147.5*	*145.4*	*143.6*	*141.1*	*328.9*	*330.8*	*325.7*	*356.5*	*341.9*	*335.3*	*327.6*
Paper and pulp	148	148	150	148	147	145	....	334	336	333	358	349	341	332
Paper goods, n.e.c.	164	163	168	165	163	162	....	353	354	351	395	381	381	368
Paper boxes	137	134	144	136	133	130	....	307	305	293	335	306	297	293

Note.—Underlying figures are for pay roll period ending nearest middle of month and cover production workers only. Figures for April, 1949, are preliminary. Back data and data for industries not here shown may be obtained from the Bureau of Labor Statistics.

PAPER-PULP-FIBERBOARD

Research Facilities

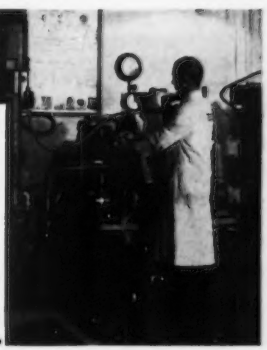
Our modern, well equipped laboratories are staffed by expert wood chemists and wood technologists.

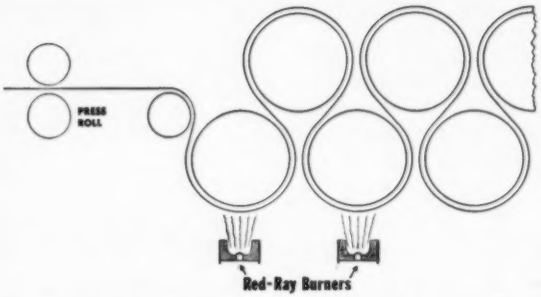
Research fields in which we specialize include:

- Pulping New Species
- Water Purification
- Paper Coatings
- Stream Pollution Abatement
- Waste Liquor Utilization
- Paper Products

Write us for appointment at your office or ours. PTJ

TIMBER ENGINEERING COMPANY • WASHINGTON 6, D.C.





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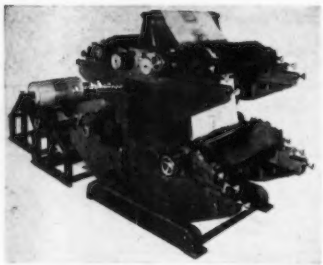
increase your drying capacity. Red-Ray Burners with automatic controls easily installed.

Write for bulletins.

RED-RAY MANUFACTURING CO., INC.

455 W. 45th ST., NEW YORK 19, N. Y.



Don't be satisfied with anything less than a . . .

WOLVERINE HYDRO-PRINTER

(Automatic *Hydraulic* Aniline Printing Press)

Investigate the many new technical innovations and improvements:

1. Hydraulic, instant on and off impression control
2. Free wheeling, constant rotating ink rollers.
3. Instantaneous running register control.
4. One single impression drive gear (no back lash).
5. Most rigid solid and compact 5 inch frame construction.
6. A complete one push-button controlled press.

Check and compare these, and many other new features with any other Aniline Press on the market and then give your plant, and press operators the finest press to work with.

★ **Widths from 31" to 122"**
★ **From two to twelve colors**

Excellent for the speedy, highgrade production in printing all kinds of paper, board, and indispensable for cellophane, polyethylene saran and any other plastic films and foils.

Duplex Slitters and Rewinders, with and without cooling rolls in widths up to 86 inches wide.

Wolverine PAPER CONVERTING MACHINERY CORPORATION

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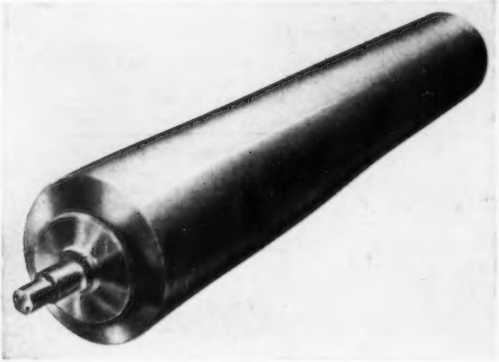


McBRIDE brings you a *Complete* ROLL *Service*

PRODUCTION: Modern production facilities for large and small rolls of all types in metal, wood, and rubber covered.

ENGINEERING: McBride engineers work with you to solve individual roll problems, then supervise production to assure rolls that meet your exact needs.

MAINTENANCE: A special department for maintenance and repair work is your assurance of prompt, top quality work.

Table Rolls	Couch Rolls	Stainless Steel Rolls
Wire Carrying Rolls	Press Rolls	Wood Rolls
Felt Carrying Rolls	Brass Rolls	Repairs to Rolls

Mc BRIDE

Edward J. McBride • 1394 Adams Ave., Philadelphia 24, Pa.

ROLLS OF ALL TYPES FOR EVERY PURPOSE

EXCELSIOR Woolen Co. KNOX Camden Me. FELTS & JACKETS

"EXCELSIOR" FELTS

Manufacturers of Felts of Superior Quality for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY

CAMDEN, MAINE

ANILINE *Print* PRESSES

PERFECT REGISTER ... TREMENDOUS SPEED

THIS brand new No. A-4 aniline printing press offers perfect register at highest speeds on cellophanes, foils, and other materials your customers require for wrapping their products. Many other models in our complete line of presses are available for the aniline printer. Write us for complete detailed descriptions.

HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS

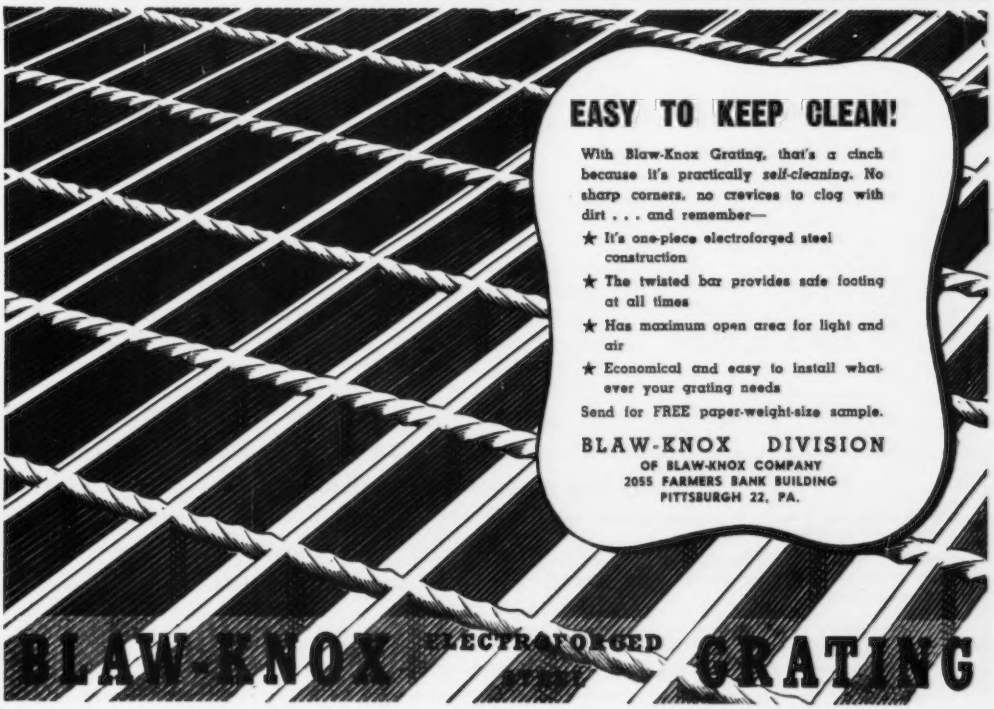
GIFT WRAPPINGS

FOLDER No. 4

FOLDED AT *HIGH SPEEDS*

Increased folding production with perfect delivery at new high speeds is now yours with our new No. 4 folder. This machine accepts single sheets or multiples up to six sheets. Versatile, it is adaptable to folding of many other paper products, as well. Write today for complete descriptive details.

HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS



EASY TO KEEP CLEAN!

With Blaw-Knox Grating, that's a cinch because it's practically *self-cleaning*. No sharp corners, no crevices to clog with dirt . . . and remember—

- ★ It's one-piece electroforged steel construction
- ★ The twisted bar provides safe footing at all times
- ★ Has maximum open area for light and air
- ★ Economical and easy to install whatever your grating needs

Send for FREE paper-weight-size sample.

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2055 FARMERS BANK BUILDING
PITTSBURGH 22, PA.

BLAW-KNOX ELECTROFORGED **GRATING**

CLEARING HOUSE

HELP WANTED

MEN WANTED
Positions Open

Chief chemist for tissue mill, salary $5,000-$6,000; young college graduate with few years' paper mill experience to sell specialties; instrument mechanic; plant engineers; electrical engineers; chief power plant engineers; mechanical engineers; machine tenders; back tenders.

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICES, Inc.
294 Washington Street, Boston, Mass.

WANTED

Tour Boss for 100 ton Folding Box Board Mill in City of 100,000 in Northern New York State.

Must be thoroughly experienced and good on colors and production.

Give complete history and experience in first letter with references.
Box No. 49-314, care Paper Trade Journal.
J-21

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. SIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

$250-$475. Control Chemist-Chem. Engr. or Chem. Degree. Sulphate experience. 24-35.

$310-$420. Groundwood Dept. Tour Foremen. 15 years exp. Groundwood Mills. 35-50.

$335-$455. Utilities Foreman. Some Mech. Engr. training. 25-45.

Instrument Mechanic. Exp. instrument control service. Under 45.

Roll Grinderman. Minimum of 5 yrs. as machinist with exp. roll or cylinder grinders.

$310-$420. Laboratory Foremen. Chem. Engr. or Chemist Minimum 3-5 yrs. exp. sulphate or Kraft lab. 25-40.

$395-$515. Sulphate Tour Foreman. 10 yrs. exp. operation sulphate pulping Equip. 30-45.

$335-$445. Wood Storage-Preparation Tour Foreman. 2-4 yrs. exp. wood handling operations. Knowledge wood handling equip. Supervise Colored labor. 25-40.

RICE EMPLOYMENT AGENCY
Radio Center Building
Little Rock, Arkansas
J-14

PAPER AND BOARD PLANT requires foreman for die-cutting department. Should have complete knowledge of paper conversion and be able to show good production results while maintaining good labor relations. Reply giving full information as to age, experience, salary, etc. Address Box 49-333 care Paper Trade Journal. J-28

WANTED—Young man experienced in manufacture and sales vulcanized fibre. Address Box 49-341 care Paper Trade Journal. TF

HELP WANTED

WANTED—Machine Tenders, Back Tenders, Beater Engineers, Night Supt. and Windermen, for 7 Cylinder Machine, manufacturing Folding Boxboard, Chip and Test Liners. Must be thoroughly experienced operators. Others need not apply. Address Box 49-328 care Paper Trade Journal. J-21

WANTED—Pulp Mill Superintendent Soda and Sulphite Process, Tomlinson furnace, continuous causticizing. Write giving experience, where worked, compensation paid and what compensation now desired. Address Box 49-331 care Paper Trade Journal. J-21

SITUATIONS WANTED

OPPORTUNITY WANTED

Seasoned executive possessing mature balance, keen perspective and inherent tact seeks position where competence, trust, and unusual ability are required. Technical and practical knowledge of paper making, converting and specialty treatments accrued during 20 years experience in production, research and technical sales.
Address Box 49-335 Paper Trade Journal

EXECUTIVE—Board and paper conversion mill experience, excellent production and labor relations history, currently plant manager. Seeks opportunity. Address Box 49-239 care Paper Trade Journal. J-28

SUPERINTENDENT—With long record as a practical Paper Maker on modern high speed cylinder machines, making Boxboards and Specialties of quality. A PRODUCTION MAN. Address Box 49-319 care Paper Trade Journal. J-14

FINISHING ROOM SUPERVISOR — 13 years experience on high speed calender and rewinder. Three years as supervisor. References. Address Box 49-320 care Paper Trade Journal. J-14

LAMINATING SUPERINTENDENT—Thoroughly experienced all grades, greaseproof, glassine, indented, check book covers and specialties. Can take charge and get production. Available on short notice. Address Box 49-326 care Paper Trade Journal. J-14

MILL SUPERINTENDENT or Assistant—Thorough experience in all grades of Tissue and Specialty Grades, desires new connections. Excellent production and labor relations background. Best references. Address Box 49-330 care Paper Trade Journal. J-28

MACHINE TENDER or Tour Boss wants position. All kinds of box board, also light weight papers, including tissue. Best of references. Address Box 49-342 care Paper Trade Journal. J-28

AVAILABLE—Manager or Sales Manager for coarse paper jobber. Twenty years experience in buying, selling and sales promotion. Thoroughly versed in all types of twines, coarse paper, specialties and most fine papers. Extremely capable and hard working. Will locate anywhere. Address Box 49-338 care Paper Trade Journal. A-4

FOR SALE

FOR SALE or RENT

Paper Mill with 3 Fourdrinier Machines, complete with auxiliary equipment. Designed for 60 tons of Specialties, News, Book, Toweling, Kraft, etc. Can be put in operation immediately. Covers 80,000 Sq. Ft., Buildings fully sprinklered, Railroad Sidings, excellent water, 1800 H. P. stoker-fired water tube Boilers installed 1936. Excellent labor conditions. All located within radius 100 miles New York City, Baltimore, Washington. Immediate possession. Attractive proposition!
Address Box 49-300. care Paper Trade Journal.
TF

GOOD VALUES—NEW & USED

54" Beck Sheeter, one year old.
58" and 78" Hamblet Sheeters.
54" Camachine No. 6 Slitter.
32" Hobbs and 34" Inman shear cut Slitters —very cheap.
39" Chandler & Price Automatic Power Paper Cutter.
New 44" National Auto. Power Cutters and 36" National Hydraulics.
Baling Presses—both hand and power.
Brackett 3-knife Trimmer.
28 x 41 Thomson Cutter & Creaser.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.)
TF

FOR SALE

6—Paper Machine Drives ,75 h. p., ratio 8 to 1. All enclosed, with automatic clutches.

A-1 condition.

J. J. ROSS COMPANY
250 Frelinghuysen Ave., Newark, N. J.
Telephone Bigelow 3-3720
J-14

FOR SALE: Board Mill in the East. 72" Trim multi-cylinder machine. Capacity 50 tons per 24 hours. For further particulars address Box #49-340, care Paper Trade Journal. J-14

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ⅓ rate will be charged for each consecutive repetition.

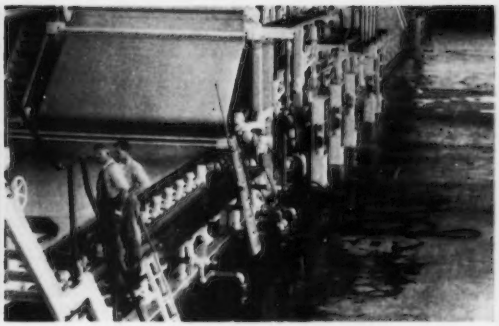
FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

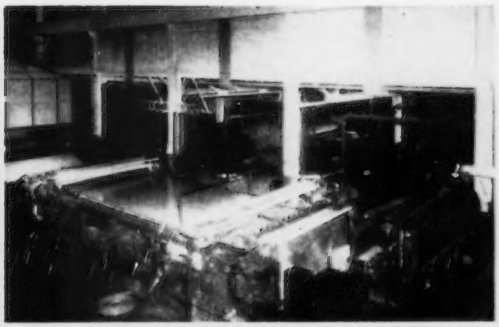
OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

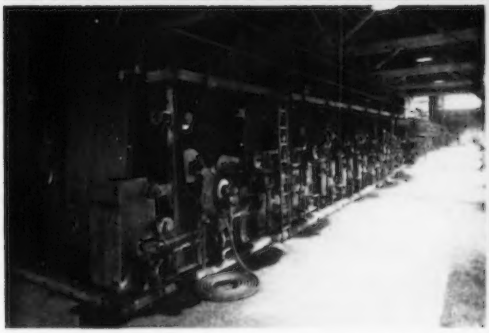
Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

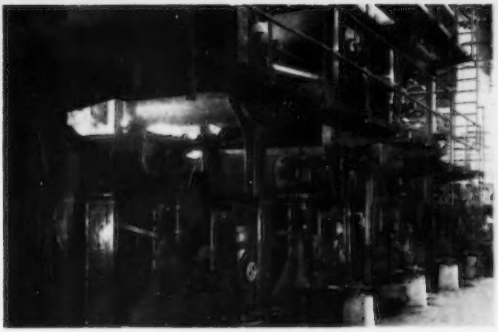
Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.



MOST MODERN MACHINES KNOWN TO THE ART







Fourdrinier sections of any required width and for operation at any required speed. Special features, including the B-C "HYDRONAMIC" Inlet to improve the delivery to wire.

Also Cylinder Machines, featuring "overhead" suction presses, "HYDRONAMIC" Inlet equipped vat sections, etc.

Machine drives, Finishing Equipment.

Black-Clawson Co.

HAMILTON, OHIO

Divisions: SHARTLE BROS. MACHINE CO., MIDDLETOWN, OHIO • DILTS MACHINE WORKS, FULTON, NEW YORK

Western Sales Office: Mayer Bldg., Portland, Ore. *Associate:* ALEXANDER FLECK LIMITED, Ottawa, Canada

Subsidiary: B-C International, Ltd., 16 Catherine Place, Victoria, London S.W.1, England

FOR SALE

FOR SALE

FOR SALE

FOR SALE

BALER
1—1000 lb. Economy with meter

BEATERS
2—64 x 84 Jones iron tub, stainless steel bars
2—76 x 85 Rabus, bronze filled rolls
2—65 x 57 Jones iron tub, perforated backfall

SUPER CALENDERS
108"—82"—74"—60"

SHEET CUTTERS
1—130" Horne duplex
1—New 104" Hamblet duplex with layboy and unwind stand
1—94" Clark with layboy
1—92" Dillon duplex with folder
1—84" Hamblet duplex, heavy, Model 28, duplex layboy
1—70" Clark
1—64" Hamblet

REAM CUTTERS
1—56" Smith and Winchester
1—50" Oswego
1—48" Acme

DRYERS
1—12 ft. x 186" Yankee
1—12 ft. x 132" Yankee
2—8 ft. x 174" Yankee
2—90" x 174"
3—48 x 126"
3—48 x 118"
4—48 x 120"
1—42 x 126"
34—36 x 80"
21—36 x 76"
2—42 x 73"
2—48 x 73"
16—36 x 62"
15—48 x 46"
4—54 x 40"
7—36 x 38"

EMBOSSERS
45" Dornbusch
30" Waldron
26" Textile, three sets rolls

MOULDS
2—42 x 121"
8—36 x 126"
7—30 x 102"
2—42 x 92"
2—36 x 92"
1—60 x 84"
1—48 x 84"
4—30 x 78"
2—36 x 46# De-Inker with vats, etc., rubber couch

JORDAN
1—#2 Appleton
1—New Mammoth Jr.
1—New Pony

FRANK H. DAVIS CO. 175 Richdale Ave., Cambridge, Mass. TF

FOR SALE
PAPER MACHINERY

Full details furnished on request.

MOTORS, 550 VOLT

H.P.	RPM	MODEL		MFG.
3	860	5K284A2841	TEFC	GE
3	860	5K284A1466	TEFC	GE
3	1140	CB254-AA	S.P.	Rel.
3	1155	5K254A1025	TEFC	GE
5	860	5K324A1876	TEFC	GE
5	1200	5K284A2909	TEFC	GE
5	1200	5K284A1409	S.O.	GE
7½	865	5K326A1993	TEFC	GE
7½	1175	5K324A1747	TEFC	GE
10	1200	5K326A1999	S.P.	GE
10	1735	5K324B94	TEFC	G.T.
15	1165	5K365HH3A	TEFC	GE
15	875	5K404EA10	TEFC	GE
15	1750	CSP-1442463	TEFC	WSHE
15	1740	326-AR	S.O.	A.C.
20	1170	5K404JB1	S.P.	GE
30	1755	5K405KA1	S.P.	GE
30	1175	5K444LT1	S.O.	GE
40	900	5K404HE4	TEFC	GE
40	900	5K504JA1	S.P.	GE
40	1180	5K445HW7	TEFC	GE
125	885	5K6333ED1	TEFC	GE
125	1190	5K6325B21	TEFC	GE
250	1185	5K6338HX1	TEFC	GE
250	589	97K689G1	TEFC	GE

POWER PLANT—NEW
Elliott Feedwater Heater 302 Sq. Ft. 220,000# hr.
Elliott 95HP Steam Turbine 4655/1170 RPM
Atwood & Morrill 150# 20" LP non Return Valve
Atwood & Morrill 10" 150# Relief Valve. 109M#/hr.
Roberts 54" Zeolite Water Softeners, 85GPM

PUMPS—USED
Shartle 36 x 36a, 22 x 14d, 5500 GPM, 16'a head.
Shartle 8 x 14, 1000 GPM, 50' head, Class LD
Shartle 6 x 12, 600 GPM, 30' head, Class LDV
Al. Chal., 4 x 4, 400 GPM, 15' head, Type RL8
Shartle, 6 x 8, RL, 300 GPM, 15' head, Class D
Shartle, 6", 300 GPM, 15' head, Class A1
Shartle, 14 x 12, 5000 GPM, 93' head, Class A2

WASHER BEATERS
6—Shartle w/80 x 55 roll, stands, etc., w/o tub.

CYLINDER WASHERS
14—Octagonal cylinder washers, 40 x 45 face.
32—Octagonal cylinder washers, 32 x 25" face.

MISCELLANEOUS
New and used: Stock and water valves, starters, compensators, 5000 volt cable, 4" conduit, bus bar, rolls, pulleys, gears, Duriron pipe, bearings, pillow blocks, fractional H.P. motors, 24 x 110 R.C. Suction press roll, friction clutches.
Reply to Box #49-315, Care Paper Trade Journal. J-14

PRIVATE SALE
1—New Warren Circulating Fan Pump
Size & Type—16-DL-20
GPM—6500
Head—20 Ft.
RPM—575
Bronze Fitted—Complete with Base

1—New Westinghouse Electric Paper Machine Drive—Complete
Address Box 49-323, care Paper Trade Journal. J-14

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE—106" Beloit 4 Ply Board Paster with 72" cut-off knife or with larger knife if necessary. Priced right for immediate sale. Address Box 49-246 care Paper Trade Journal. TF

FOR SALE—Dyno Pulper—8 foot—Used less than two years. Perfect condition. Inquire: Simplicity Pattern Co., Inc., Niles, Michigan. J-28

FOR SALE—Rubber Covered Couch Roll 22" dia. x 90"-92" face, shoulder to shoulder 106" 2¾" Journals with at least 2¼" thickness of good rubber complete with bearings. Rockton Felt & Paper Co., 1500 N. Hooker St., Chicago, 22, Ill. TF

FOR SALE—New Felts in the original wrapping at substantial savings. 2—Dryer Felts 88" x 55 Yds. 1—Dry Felt 88" x 45 Yds. and 1—Top Felt 92" x 122". SANGAMON PAPER MILLS, INC., 137 W. Pershing Rd., Chicago, 9, Ill. J-21

FOR SALE—Noble and Wood Mill, complete with 12 shoes, 600 HP Induction Motor, Magnetic Controller and Extra Equipment. A.P.W. Products Co., Inc., P. O. Box 111, Albany, N. Y. A-4

FOR SALE

1—64" trim twenty five ton six cylinder board machine with auxiliary equipment, now running.

1—38" trim one cylinder machine with eighteen dryers 28" x 42", six roll calender.

1—165" Fourdrinier with 25" dia. suction couch ran 800 F.P.M. also 2 sets of 160" Face Presses.

1—165" x 22" dia. suction Press Roll.

Address Box 49-329, care Paper Trade Journal. J-28

WANTED

WANTED
COMPLETE CYLINDER MACHINE
TO TRIM APPROXIMATELY
90 INCHES BOARD.
Principals only.

Address Box 49-167, care Paper Trade Journal. J-14

WANTED—W & P Shredders, Evaporators Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 49-273 care Paper Trade Journal. TF

WANTED

WANTED
GOOD USED WAXING MACHINE —of any standard make—72" wide or wider.

Address Box 49-334 care Paper Trade Journal. J-14

WANTED
WOOD GRINDING MACHINERY
TO PRODUCE 100 TONS
WET PULP PER WEEK.
Principals only.

Address Box 49-337, care Paper Trade Journal. J-14

Wanted: Two color Quarterfold 13½" Napkin printing folder. Give full particulars in reply to Box 49-336, care Paper Trade Journal. J-28

PAPER MANUFACTURER desire to purchase or invest in converting business of standard paper products. Address Box 49-274 care Paper Trade Journal. TF

WANTED—Brightwood Box Machine. Address Box 49-275 care Paper Trade Journal.

FREE STORAGE

FREE STORAGE
of your Used Surplus Equipment in our 80,000 sq. ft. warehouse when consigned to us for resale. Write for details.

ROSS PAPER MACHINERY COMPANY
265 Passaic Street, Newark, N. J.
Tel. HUMBOLT 2-2177 TF

BUSINESS OPPORTUNITY

PAPER CONVERTERS
in New York area will convert facial quality toilet tissue 4½x4½ for Brokers or Distributors who desire an output for usage as their private brand with a special label. Address Box 49-339, care Paper Trade Journal. J-14

FOR SALE

1—102" Cameron Type 18—60" diameter rewind capacity.

BARKERS
1—5' Carthage Disc Barker

BEATERS
1—400 lb. Beater—iron tub.

BEATERS (Laboratory)
2—Dilts Iron Tub Laboratory Beaters. Beater rolls 14" diameter x 10½" face, including motors.

BRASS FELT ROLLS
9—4" diameter x 140" face (with bearings).

BREAST ROLLS
1—100" x 14".
1—114" x 14".
1—120" x 14".

CALENDER STACKS
1—72" 5 roll Calendar Stack.
1—76" 7 roll calender stack (heavy duty).

CHIPPERS
2—96" Murray 4 knife Chippers.

CYLINDER MOULDS
1—36" diameter x 80" face.
1—30" diameter x 72" face.
1—36" diameter x 79" face.

DECKER
1—Decker—48" diameter x 84" cylinder mold

DRIVES
2—#4 Reeves Drives.
1—#2 Reeves Drive.
1—Smith & Winchester mortise gear Drive.
1—Foote—7½ h.p. Speed Reducer (Ratio 240 to 1)
2—Smith & Winchester Mortise Gear Drives with 26" diameter clutches—Ratio 8 to 1.
6—Enclosed drives. 75 h.p., ratio 8 to 1. Complete.

DRIVES (Angle)
1—General Machine Company 16 : 1.
1—Philadelphia 50:1 — 1 h.p. — 1200 r.p.m.
2—Philadelphia 21½:1 — 3 h.p. — 1200 r.p.m.

V-BELT DRIVE
1—81½" diameter x 7½" face, 3 groove
1—16½" diameter x 7½" face, 5 groove (With clutch).

DRYERS
30—36" diameter x 102" face.
50—42" diameter x 126" face.
1—36" diameter x 76" face.
1—48" diameter x 91" face
1—48" diameter x 94" face
1—25" x 120" (Baby Dryers)
2—36" x 143".
1—24" x 130".

EMBOSSER
1—84" Hudson Sharp Toilet Embosser. Spare engraved roll.

FLAT SCREENS
1—6 plate Shartle Flat Screen
1—8 plate Packer Type Flat Screen.
2—12 Plate Murray Dunbar Flat Screens.
2—14 plate Sandy Hill. (Never used.)

FRICTION CALENDERS
2—30" Waldron.
2—38" Waldron.

HYDRAULIC PRESS
1—Watson-Stillman Co. (Platen 24" x 24").

JORDANS
1—Noble & Wood, Pony Monarch. Belt Driven.
2—Noble and Wood—Mammoth Type
1—Emerson Jordan—25 to 30 tons capacity —iron plug including new spare iron plug.

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1—Caustic Mixer.

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2—5 h.p. ball bearing—splash proof motors —3/60/440, 1160 r.p.m.
1—½ h.p. ball bearing—splash proof gear-head motor—3/60/440, 1725 r.p.m.
1—2 h.p. ball bearing—splash proof gearhead motor—3/60/440, 1725 r.p.m.

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Various sizes.

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1—3 color 40" Rotary Cottrell Printing Machine, A-1 condition, provision for 2 more colors.

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2—Weil Pump Co.—100 g.p.m.—100 P.S.I. including 15 h.p. motors (new equipment).
1—Bell & Gossett—300 g.p.m.—120' head—including 15 h.p. motor.
1—Goulds Sump Pump—50 g.p.m.—20' head —including motor.
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1—72" Beloit Reel.

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500—Brass tube-steel tube—rubber covered iron rolls—various sizes.

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1—#2 Bird Rotary Screen.
1—#2A Bird Rotary Screen.

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1—Pusey & Jones Saveall. Cylinder mold 42 x 146, anti friction bearings, including rubber covered couch roll.
1—#5 Bird Saveall.

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20 Plates cut .016.
10 Plates cut .008.
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1—136" Moore & White Sheeter, duplex, with layboy.

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1—208" Cameron—Type 20.
1—84" Cameron—Type 18.
1—102" Cameron—Type 18.
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1—62" Cameron—Type 10-10-AJ.
1—50" Cameron—Type 24-2L
1—42" Cameron—Type 40-4-B.
1—42" Cameron—Type 24-2A
1—42" Cameron—Type 9-5.
1—42" Cameron Constant Tension with pneumatic control.
1—30" Langston.
1—62" Cameron—Type 6 (Shear cut).

SQUEEZE ROLLS
2—Rubber Squeeze Rolls, 20¾" diameter x 102" face.

STOCK PUMPS
1—10 x 20 Shartle Duplex.
4—7 x 16 Shartle Duplex.
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SUCTION BOXES
5—Suction Boxes, 82" drilled face x 6" wide.

SUCTION COUCH ROLL
1—24⅞" diameter x 160" drilled face.
1—Sandusky 14¼" diameter x 103" drilled face.

SUCTION PRESS ROLL
1—Downingtown Suction Press Roll 24" diameter x 110" face.

SUCTION PRESS ROLL SHELL (Only)
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2—Dietz 81" Toilet & Towel Machines.

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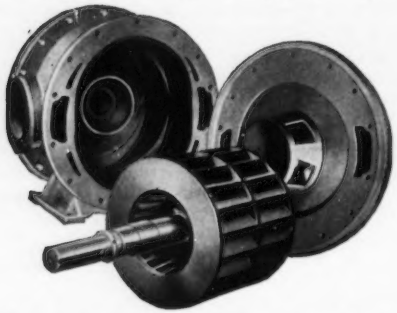

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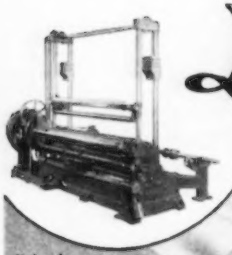

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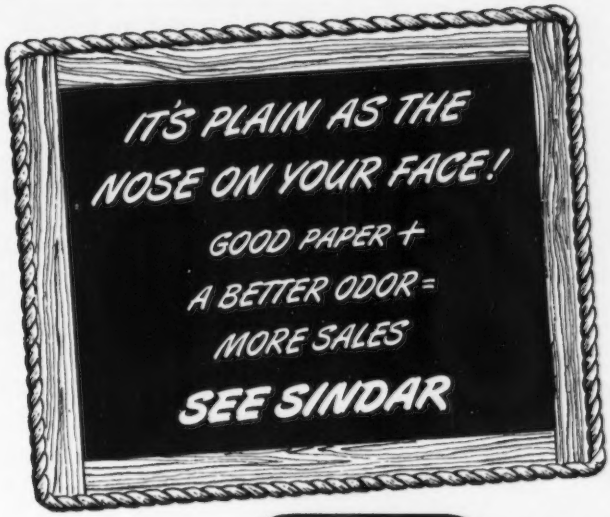

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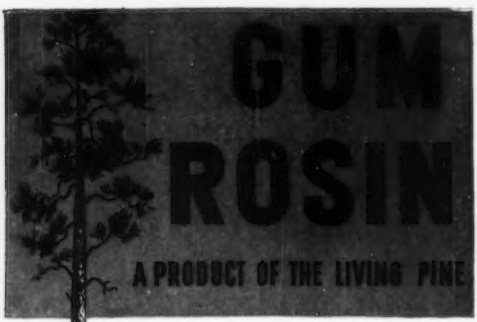

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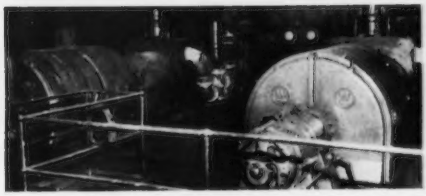

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Williams-Gray Co.

DE-INKING
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
Shartle Brothers Machine Co

DEINKING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Midwest-Fulton Machine Co.
Monsanto Chemical Company
Philadelphia Quartz Co.

DENSOMETERS
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

DEWAXING CHEMICALS
General Dyestuff Corp.
Nopco Chemical Co.

DIGESTERS
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
Lukenweld
Pusey & Jones Corp.

DIRTEC
Bird Machine Co.

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.

DOCTORS
Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
Bird Machine Company
Black-Clawson Company
Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DRIERS
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
The Youngstown Welding & Engrg. Co.

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Chain Belt Company
Davis, Frank H., Co.
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Syco Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp

DRYER DRAINAGE
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

DYESTUFFS
American Cyanamid Company, Calco Chemical Div.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.
C. K. Williams & Co.
Witco Chemical Co.

EMBOSSING ROLLS
The Appleton Machine Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Middvale Company
Northern Engraving & Mch. Co
B. F. Perkins & Son, Inc.
John Waldron Corp.

EMULSIFIERS
Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.

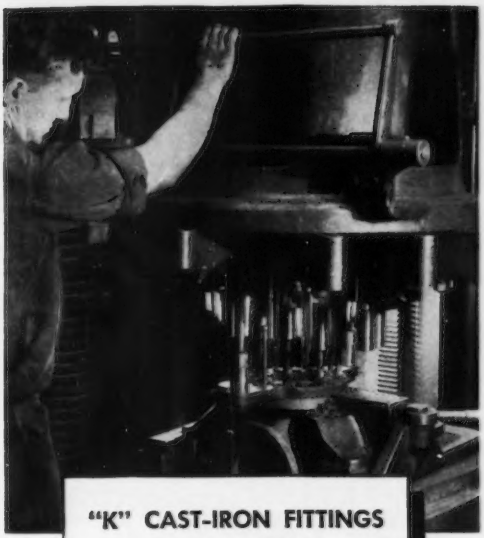
EVAPORATORS
Davis Engrg. Corp.
Foster Wheeler Corp.
Goslin-Birmingham Mfg. Co. Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div of Whiting Corp.

EXPANDERS
Mount Hope Machinery Co.

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O

FEEDERS
Hardinge Company, Inc.
Merrick Scale Mfg. Co.
Leeds & Northrup

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bulkley, Dunton Pulp Co., Inc
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills Inc.
Morey Paper Mill Supply Co
Orr Felt & Blanket Co.
Shuler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co
Williams-Gray Co.



"K" CAST-IRON FITTINGS GIVE YOU THE CRAFTSMANSHIP OF SPECIALISTS

"K" on a cast-iron fitting is the trademark of a company that has specialized on this class of product for more than sixty years. All of our efforts, skills, and facilities are devoted exclusively to the manufacture of cast-iron fittings which we guarantee to be sound and accurate in every respect.

A large proportion of the country's leading plant engineers and piping contractors have learned that it pays to use "K" Cast-Iron Fittings. This is evidenced by the growth of our business, which has required numerous plant expansions to keep a complete supply of "K" Fittings in stock for immediate shipment.

The "K" line consists of 3,000 sizes in the following types:

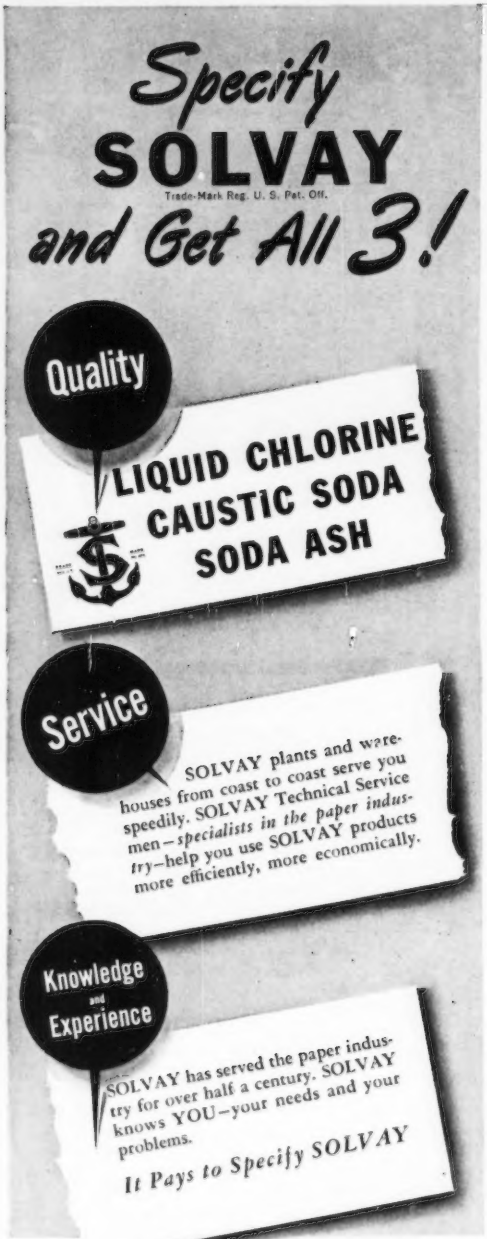
Standard and Extra Heavy Flanged Fittings
Standard and Extra Heavy Screwed Fittings
Drainage and Sprinkler Fittings
Standard and Extra Heavy Companion Flanges

We have a handy pocket gage for measuring pipe sizes. It contains a table of theoretical allowances for make-up when pipe is forcibly screwed into fittings. If you want one, mail a request on your letterhead.

PRECISION FITTINGS

THE KUHNS BROTHERS CO.
1804 McCALL AVENUE
DAYTON 1, OHIO

Combined Market Facilities with Malleable Iron Fittings Co., Branford, Conn.


Specify
SOLVAY
Trade-Mark Reg. U. S. Pat. Off.
and Get All 3!
Quality
LIQUID CHLORINE
CAUSTIC SODA
SODA ASH
Service
SOLVAY plants and warehouses from coast to coast serve you speedily. SOLVAY Technical Service men—specialists in the paper industry—help you use SOLVAY products more efficiently, more economically.
Knowledge and Experience
SOLVAY has served the paper industry for over half a century. SOLVAY knows YOU—your needs and your problems.
It Pays to Specify SOLVAY

Also: Para-dichlorobenzene • Ortho-dichlorobenzene • Potassium Carbonate

SOLVAY SALES DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

BRANCH SALES OFFICES:
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
Houston • New Orleans • New York • Philadelphia • Pittsburgh
St. Louis • Syracuse

WHERE TO BUY

FELT CLEANERS
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp
Nopco Chemical Co

FELT CONDITIONERS
Bird Machine Co.

FELT GUIDES
Black-Clawson Co.
Frank W. Egan & Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Waldron Corp., John

FILLERS
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.
A. M. Meincke & Son, Inc
Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Bird Machine Company
Cochrane Corp.
Hardinge Company, Inc
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp
Witco Chemical Co.
Walworth Company

FITTINGS
Crane Company
The Kuhns Bros. Co.
Phoenix Products Co.
Walworth Company

FLEXIBLE COUPLINGS
Ajax Flexible Coupling Co.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.

FORMING MACHINES
Black-Clawson Co.
Downingtown Mfg. Co
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co

FREENESS TESTERS
Testing Machines, Inc

GASKETS
The Goodyear Tire & Rubber Company

GEARS
American Manganese, Steel Div.
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Smith & Winchester Mfg. Co
Suburban Machine Co.
Valley Iron Works Co.
Waldron Corp., John
Westinghouse Electric Corp.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES, WEB
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Bound Brook Engrg. Co.

GUMS
National Starch Products Inc.
Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

HEAT EXCHANGERS AND RECOVERY SYSTEMS
William Allen Son's Company
Davis Engrg. Corp.
Foster Wheeler Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Cochrane Corp.
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

IMPREGNANTS
American Anode Div., The B. F. Goodrich Chem. Co.

INDUSTRIAL TRACTORS
Clark Equipt. Co., Clark Tractor Div.
Towmotor Corp.

INK GRAVURE
Gotham Ink & Color Co.

INSTRUMENTS, TESTING AND MEASURING
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowsher
The Bristol Company
The Brown Instrument Co.
E. J. Cady Company
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

JOINTS
Johnson Corp.
Perfecting Service Corp.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

LABORATORIES
Timber Engrg. Co.

LABORATORY EQUIPMENT
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc
Hamblet Machine Co.
Moore & White Co.
Suburban Machine Co.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MATERIALS HANDLING
Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
E. J. Cady Co.
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

MOISTURE CONTENT CONTROL
Askania Regulator Company
Midwest Fulton Machine Co.
Stickle Steam Specialties Co.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Link Belt Company

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

PAINT
American Marietta Co., Valdura Division

PAPER MACHINES
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PENSTOCKS
The Bigga Boiler Works Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

PIPE
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

PIPE FITTINGS
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Ladish Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

PITCH CONTROL
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

PLATERS
Gibbs-Brower Company, Inc
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY
William Allen Son's Company
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
The Midvale Company

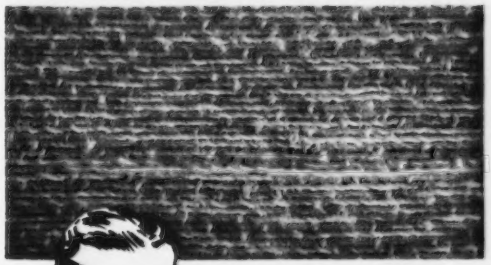
PRESSES
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co. Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER
The Bauer Bros. Co.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

PULPERS
American Paper Mchy. & Engrg. Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.



Bottom felts, both Orr, are identical except that one is an ORR-CHEM (treated chemically) and the other was untreated. Ran consecutively on same machine under identical conditions and for the same length of time. The ORR-CHEM is still in good condition; the untreated Orr is worn out.

ORR-CHEM REPORT

When the first ORR-CHEM ad appeared (Jan. 2, 1947) only a handful of mills had tried these new longer-wearing, better-draining, treated felts but they liked them and gave them their stamp of approval.

Today, after two years of experience with ORR-CHEM treated felts, hundreds of mills rate them "tops" and have standardized on them.

Today, approximately 40% of all felts woven at Orr are given this special chemical treatment to make them:

a. GO ONTO THE MACHINE EASIER
b. SET TO THE MACHINE BETTER
c. DRAIN FASTER
d. STAY IN SERVICE LONGER

Regardless of the type or speed of your machine, the kinds of stock you are using, or the grades you are running, you should give ORR-CHEM chemically treated felts an opportunity to prove their superiority.

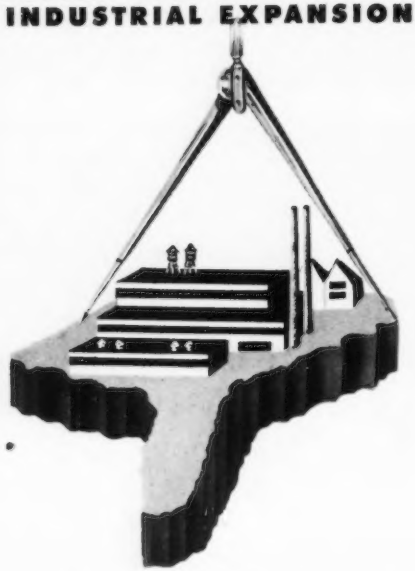
ALSO STANDARD UNTREATED FELTS.

THE ORR FELT & BLANKET CO.
PIQUA, OHIO

ORR-CHEM

The Southeast

LOGICAL REGION FOR YOUR INDUSTRIAL EXPANSION



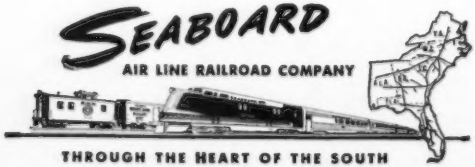
The list of new and expanded industries in the Southeast covers the widest possible range of enterprise. That's not surprising, because here there's *room to grow*—plus other definite advantages such as easy access to many kinds of raw materials, adequate labor resources, modern utilities, and a climate that favors year-round operations.

Seaboard, serving this progressive area, looks forward to serving you, too . . . with its modern freight and passenger facilities so adaptable to every phase of your business. Choice plant sites along Seaboard's busy route are available now. A brief outline of your plans will bring you without obligation a factual, informative survey of one or more "likeliest locations" for your specific requirements. May we hear from you? Please address:

Dallas T. Daily, General Industrial Agent
Seaboard Air Line Railroad Company, Norfolk 10, Va.

YES! GO WEST!
1949 Fall Meeting TAPPI
Portland, Oregon

SEABOARD
AIR LINE RAILROAD COMPANY



THROUGH THE HEART OF THE SOUTH

WHERE TO BUY

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

PULPSTONES
Norton Company

PUMPS
Allis-Chalmers Mfg. Co.
American Manganese, Steel Div.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
Adell Chemical Co.
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Midwest-Fulton Machine Co.
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESEARCH CHEMISTS
Timber Engrg. Co.

RESINS
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS
American Cast Iron Pipe Co.
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Edward J. McBride
The Midvale Company
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Philbrick Engrg. Corp.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS
The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Edward J. McBride
Stowe-Woodward, Inc.

ROLL STANDS
Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
The Moore & White Co.

ROTARY BOILERS
The Biggs Boiler Works Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURANTS
American Anode Div., The B. F. Goodrich Chem. Co.

SATURATING MACHINES
Black-Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Hardinge Company

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.

Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS

Allis-Chalmers Mfg. Co.
American Paper Mchy. & Engrg. Works, Inc.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SHEET MACHINES

Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Suburban Machine Co.
Valley Iron Works Co.

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Hudson Sharp Machine Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
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J. J. Ross Company
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Waldron Corp., John

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SULPHUR BURNERS

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American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.

TANKS

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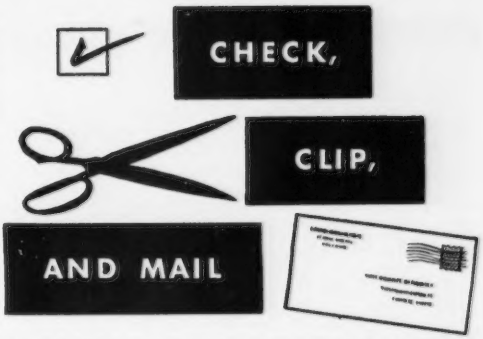

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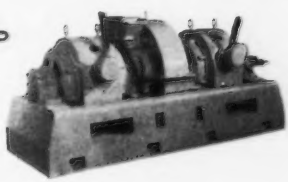

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Weber, Herman G.

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Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
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The Appleton Machine Co
Carthage Machine Co

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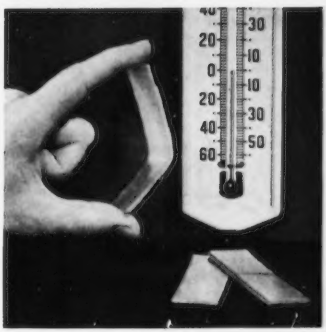

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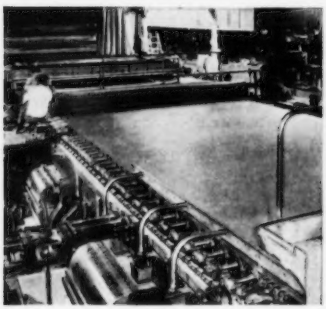

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